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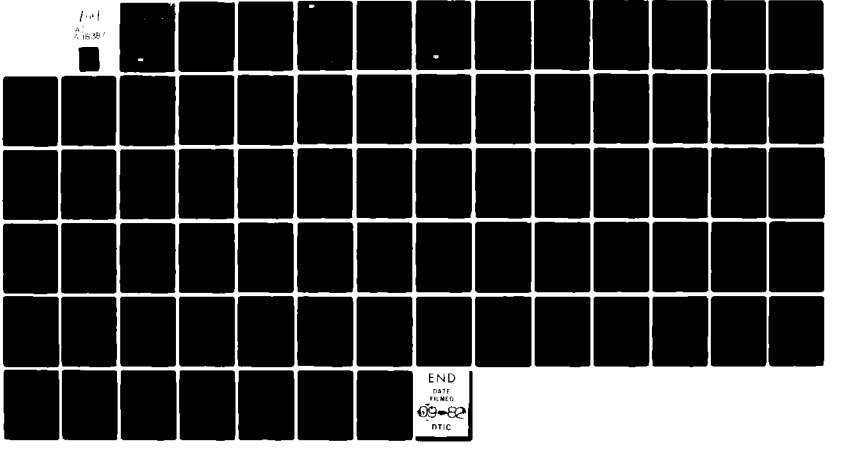

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A USER'S MANUAL FOR RETENTION GOAL CALCULATIONS

Leo J. Grike

CENTER FOR NAVAL ANALYSES

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This report is a user's manual for a set of programs used to calculate Marine Corps retention goals for individual commands, given overall Marine Corps retention goals. The programs allow adjustments to differentiate between usual and early reenlistments and to account for differences in the situations of individual commands. Current goals consider commands' occupational field compositions; programs are also provided for the case in which occupational fields are not considered.

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ABSTRACT

This report is a user's manual for a set of programs used to calculate Marine Corps retention goals for individual commands, given overall Marine Corps retention goals. The programs allow adjustments to differentiate between usual and early reenlistments and to account for differences in the situations of individual commands. Current goals consider commands' occupational field compositions; programs are also provided for the case in which occupational fields are not considered.

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INTRODUCTION AND BACKGROUND

In FY 1981, the Marine Corps adopted numerical retention goals for subordinate commands. These goals are calculated [1] from numerical goals for occupational fields (OFs). Each occupational field goal is divided among commands according to the separations scheduled in each command for that field and retention category. A command's goals are the sums of the command's fair shares of the occupational field goals. For this purpose a command is defined by the monitored command codes (MCCs) and reporting unit codes (RUCs) for which it receives credit for retentions.

Note that the input occupational field goals are goals for retention of those now in the designated fields. These goals count lateral moves out of the field, but not moves into the field.

This manual contains instructions and programs for calculating retention goals. The programs take an extract from the Manpower Management System (MMS) tapes and produce numerical goals for each command in each of three retention categories (first-term, intermediate, and career).

DISCUSSION

General

There are two main programs: one to construct separation data matrixes and one to calculate the goals from the separation matrixes. The first program ("SETUP") takes about 7 CPU minutes on an IBM 370 class computer; it lists the command definitions (MCCs and RUCs) and gives the MCC-RUC combinations found in MMS, but not included in the command definitions. "SETUP" assigns these combinations to a miscellaneous command category ("MISC2"); if the combinations are to be allocated to commands, "SETUP" must be rerun.

The second program ("GOAL") takes less than 10 CPU seconds. "GOAL" accepts weights for the 2 fiscal years' separations data (which allows for emphasizing current-year reenlistments over early reenlistments). "GOAL" allows for adjustment of command goals by multiplying the separations for individual commands, particular years, and specific retention categories by factors. In this way, goals can be adjusted to differences in commands' situations.

SETUP

The program listing for "SETUP" is given in appendix B. The input consists of four card files and one tape:

- "MCC" - a list of command definitions in terms of MCCs and MCC-RUC combinations

- "IFIELD" - an ordered list of occupational fields
- "NAMES" - an ordered list of command names
- "CHOICE" - which selects between listing the input and listing plus constructing the separation data matrixes; specifies the goal fiscal year starting date; and gives the boundary numbers of years for the years-of-service categories
- A Manpower Management System extract tape.

If the extracts contain any MCCs or MCC-RUC combinations not included in the command definitions, these are identified by "SETUP" and their frequencies are given. They are aggregated in the command category "MISC2".

"SETUP" lists the occupational fields in the order input and counts the number of records read and the number with blank occupational fields. Records with invalid contract expiration dates are counted as bad records.

"SETUP" creates the following files:

- Files 11, 12, 13, 21, 22, and 23, which contain the separation frequencies by fiscal year and retention category
- File 45, which gives the number of commands, including, if required, "MISC2"
- File 47, which gives the number of occupational fields.

GOAL

The program "GOAL" is given in appendix C. "GOAL" takes input from disk (partly created by "SETUP") and from cards. The disk input is:

- Separation data ("FY11," "FY12," "FY13," "FY21," "FY22," "FY23,"), by year (1, 2) and retention category (1, 2, 3)
- Names of commands ("NAMES"), in the order of the separation matrix rows
- Occupational fields ("IFIELD"), in order of the separation matrix columns
- Number of separate commands ("M"), which is the number of rows in each matrix

- Number of fields ("N"), which is the number of columns.

The cards entered directly by the user as the card file "INPUT" are:

- The weight factors ("W") for the first year's separation data; the factors for the second year are 1-W
- The amount of output detail wanted (two choices)
- Adjustments desired, by command, fiscal year, and retention category.

The other card file input ("OFGOAL") gives the overall Marine Corps retention goals by occupational field and retention category. The fields must be the same as, and in the same order as, the fields listed in the output of "SETUP."

The optional output of "GOAL" is:

- The weighted sums of 2 years' separations, by command, field, and retention category
- The fraction of each occupational field goal assigned to each command
- The occupational field goals for each command.

This optional output is useful mainly for checking programs.

The nonoptional output is:

- The weighted sums of 2 years' separations, by command and retention category
- The command retention goals
- The overall occupational field goals
- Percentages, by field and retention category, that can be used by commands to divide command goals among subcommands
- A warning when the Marine Corps goal for a field exceeds the scheduled separations in that field.

If an MCC-RUC combination is to be divided among commands, rather than assigned to a single command, it must be treated as a separate command in the calculations. The resulting goals can then be divided manually as desired.

Appendix A describes the MMS extract tape. Appendix B describes the program for aggregating the extract data. Appendix C describes the program for the goal calculations. Appendix D describes the input files. Appendix E lists and identifies the program variables. Appendix F is a checklist for running the programs. Appendix G describes the program decks.

Appendix H contains programs and supplementary instructions for calculating goals without distinguishing separations by occupational field.

REFERENCE

[1] CNA, Memorandum 81-3023, "A Method for Assigning Numerical Retention Goals to Commands," by Leo J. Grike, Unclassified, 11 Feb 1981

APPENDIX A

THE MMS EXTRACT TAPE

APPENDIX A

THE MMS EXTRACT TAPE

The data for the calculations are from Manpower Management System (MMS) tapes. The most recent tapes are preferred. The data consist of extracts from the records of persons scheduled to separate during the next 2 fiscal years (FY 1982 and FY 1983 for FY 1982 goals). Specifically, the records extracted are of those with expiration of current contract dates (ECCD) in either of the 2 years, when the person has both a chargeable strength code (0 through 7) and a duty status code of 1 (full duty). Count only enlisted persons. When the MCC is 275 (Ft. Leavenworth), count only RUC 53570.

Table A-1 lists the items to be extracted and gives the formats. The MOS is included to provide flexibility in redefining occupational fields. This would have been needed for FY 1981 goals when a split of OF 66 into OF 63 and OF 64 left entries for all three fields in MMS at the time of the goal calculations.

TABLE A-1

MMS EXTRACT ITEMS AND THEIR FORMATS

Item	Format
Parent Monitored Command Code (MCC)	A3
Reporting Unit Code (RUC)	I5
Fleet Assistance Program MCC (FAP-MCC)	A3
Active Duty Base Date (ADBD)	3I2
Expiration Current Contract Date (ECCD)	3I2
Military Occupational Specialty (MOS)	I4
Occupational Field (OF)	I2

Note: Enlisted only. ECCDs in the next 2 fiscal years only. Chargeable strength code (0 through 7) and a duty status code of 1 (full duty). For MCC 275 (Ft. Leavenworth), count RUC 53570 (nonprisoners) only.

APPENDIX B

THE PROGRAM "SETUP"

APPENDIX B

THE PROGRAM "SETUP"*

"SETUP" is the program that takes the MMS extract data and aggregates and organizes it into input for "GOAL," the program that calculates the goals. "SETUP" can be run without using the extract data; this mode allows checking the input data for occupational fields and command definitions.

Table B-1 is a flowchart for "SETUP." Table B-2 lists the program. Note that the retention categories are defined in the input card file "CHOICE."

To run "SETUP," first enter on disk the card files "MCC," "IFIELD," and "NAMES" (catalog them). Put the resulting file names in the "SETUP" run deck. Set the card file "CHOICE" to print the occupational fields and command definitions. When these are satisfactory, catalog the MMS extract tape and set "CHOICE" to calculate the separations matrixes. If new MCC-RUC combinations now appear, change "MCC" (and perhaps "NAMES") and rerun "SETUP."

* The program "SETUP" was written by Ann R. Truss.

TABLE B-1
FLOWCHART FOR "SETUP"

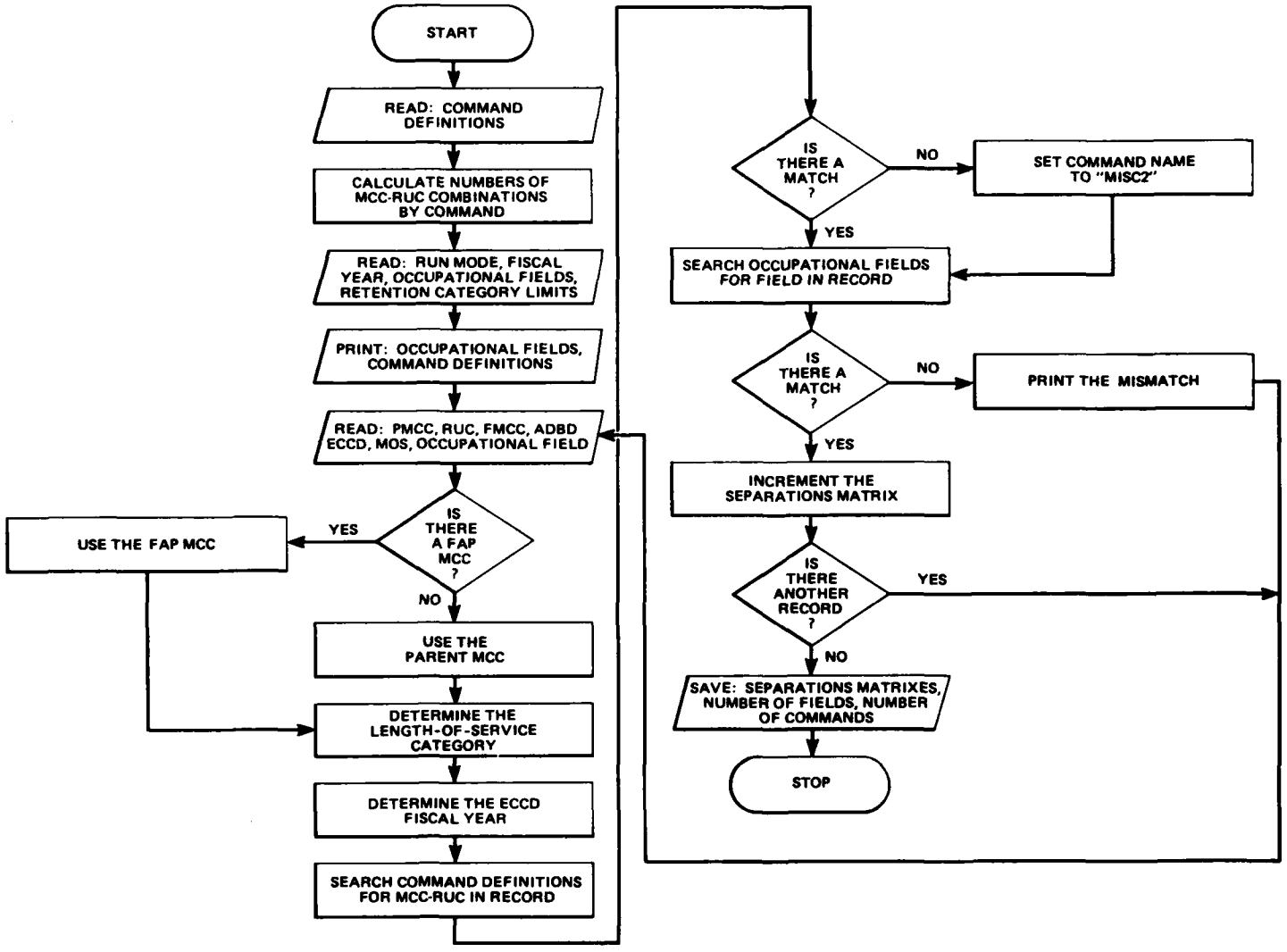


TABLE B-2

PROGRAM LISTING FOR "SETUP"

```
C
C     THIS PROGRAM CALCULATES 6 MATRIXES OF OCCUPATION FIELD BY
C     COMMAND NAME.  EACH MATRIX REPRESENTS FISCAL YEAR CONTRACT
C     ENDS (CURRENT OR FOLLOWING YEAR) AND A YEARS-OF-SERVICE CATEGORY.
C     FY11=FIRST FISCAL YEAR AND YEARS ENLISTED LE 5
C     FY12=FIRST FISCAL YEAR AND YEARS ENLISTED GT 5 AND LE 10
C     FY13=FIRST FISCAL YEAR AND YEARS ENLISTED GT 10
C     FY21=SECOND FISCAL YEAR AND YEARS ENLISTED LE 5
C     FY22=SECOND FISCAL YEAR AND YEARS ENLISTED GT 5 AND LE 10
C     FY23=SECOND FISCAL YEAR AND YEARS ENLISTED GT 10
C
C
      INTEGER IFY(2,3,100,50),IOCCUP(50),NAMES(100,20),ICOUNT,
     1NFREQ(1000),NOMAT2(1000),COMRUC(100,400)
      INTEGER LEND,LBEGIN,LENGTH
      INTEGER KK,X,NOBIG,ICOLS(100),NOOCUP
      INTEGER ADBYR,ADBMON,ADBDAY,ECCYR,ECCMON,ECCDAY
      INTEGER CODE,NCARD,CHOICE,TEMP2
      INTEGER RUC,MOS,NOCCUP,NUMCOM,NMCOM2,NUMOFS
      INTEGER YR,MON,DAY,END1,END2,START
      INTEGER FAP,ERROR,YOS1,YOS2
      REAL COMMCC(100,400),TEMP1,NOMATC(1000)
      REAL PMCC,FMCC,NMCC
      DATA BLANK/'   '/
      DATA ZERO/'000'/
      ERROR=0
      FAP=0
      NOBIG=0
      CODSUM=0
      NOOCUP=0
C
C      ZERO THE SEPARATIONS MATRIX
C
      DO 7 I=1,2
      DO 7 J=1,3
      DO 7 K=1,100
      DO 7 L=1,50
      IFY(I,J,K,L)=0
    7 CONTINUE
C
C     READ IN MCC-RUC COMBINATIONS THAT DEFINE THE COMMANDS.
C     DETERMINE THE NUMBER OF COMBINATIONS FOR EACH COMMAND.
C
      DO 6 I=1,100
      ICOLS(I)=1
    6 CONTINUE
    8 CONTINUE
      READ(40,45,END=12) ICOUNT,TEMP1,TEMP2
      NUMCOM=ICOUNT
      X=ICOLS(ICOUNT)
      COMMCC(ICOUNT,X)=TEMP1
      COMRUC(ICOUNT,X)=TEMP2
      ICOLS(ICOUNT)=1+ICOLS(ICOUNT)
      GO TO 8
   12 CONTINUE
C
C      READ THE RUN MODE (LIST OR LIST PLUS CONSTRUCT MATRIXES),
C      THE GOAL YEAR START DATE, AND THE CUTOFF YEARS FOR THE
C      RETENTION CATEGORIES
```

TABLE B-2 (Cont'd)

```
C
      READ(80,10) CHOICE
      READ (80,666) YR,MON,DAY
      READ (80,70) YOS1,YOS2
      YOS1=YOS1*360
      YOS2=YOS2*360
      START=YR*360+MON*30+DAY
      END1=START+359
      END2=START+719
    5 CONTINUE
C
C     READ AND PRINT THE OCCUPATIONAL FIELDS
C
      DO 17 I=1,50
      NUMOFS=I-1
      READ (25,50,END=19) IOCCUP(I)
   17 CONTINUE
   19 CONTINUE
      WRITE (6,680)
      WRITE(6,11)
      WRITE (6,692) (IOCCUP(I),I=1,NUMOFS)
      WRITE(6,11)
      NMCOM2=NUMCOM
C
C      READ COMMAND NAMES AND PRINT COMMAND DEFINITIONS
C
      NMCOM2=NUMCOM+1
      DO 18 J=1,NMCOM2
      READ (24,770) (NAMES(J,I),I=1,20)
   18 CONTINUE
      DO 13 J=1,NUMCOM
      ICOLS(J)=ICOLS(J)-1
      KK=ICOLS(J)
      IF (ICOLS(J).EQ.1) GO TO 14
      WRITE(6,688) J,(NAMES(J,I),I=1,20),ICOLS(J),((COMMCC(J,I),
     1COMRUC(J,I)),I=1,KK)
      GO TO 16
   14 WRITE(6,689) J,(NAMES(J,I),I=1,20),ICOLS(J),((COMMCC(J,I),
     1COMRUC(J,I)),I=1,KK)
   16 WRITE(6,11)
   13 CONTINUE
      WRITE(6,11)
   15 CONTINUE
C
C     ZERO VECTORS OF UNMATCHED MCC-RUC COMBINATIONS
C
      DO 77 I=1,1000
      NOMATC(I)=0.
      NOMAT2(I)=0
   77 CONTINUE
C
C     CHOOSE WHETHER TO STOP OR TO CALCULATE THE SEPARATIONS MATRIXES
C
      IF (CHOICE.EQ.0) GO TO 777
C
C     READ RECORDS AND PUT SEPARATIONS INTO MATRIXES
C
      NCARD=0
      DO 100 N=1,200000
      READ(30,60,END=999) PMCC,RUC,FMCC,ADBYR,ADBMON,ADBDAY,ECCYR,ECCMON
     1,ECCDAY,MOS,NOCCUP
C
C     SELECT PARENT OR FAP MCC
C
      NMCC=PMCC
      IF ((FMCC.NE.ZERO).AND.(FMCC.NE.BLANK)) NMCC=FMCC
```

TABLE B-2 (Cont'd)

```
      IF ((FMCC.NE.ZERO).AND.(FMCC.NE.BLANK)) FAP=FAP+1
      NCARD=NCARD + 1
C
C       CALCULATE LENGTH-OF-SERVICE (RETENTION) CATEGORY
C
      LEND=(ECCYR*360 + ECCMON*30 + ECCDAY)
      LBEGIN=(ADBYR*360 + ADBMON*30 + ADBDAY)
      LENGTH=LEND-LBEGIN
      IF (LENGTH.LE.YOS1) NYRS=1
      IF (LENGTH.GT.YOS1.AND.LENGTH.LE.YOS2) NYRS=2
      IF (LENGTH.GT.YOS2) NYRS=3
C
C     CALCULATE FISCAL YEAR CATEGORY--NFY
C
      IF ((LEND.LT.START).OR.(LEND.GT.END2)) GO TO 888
      IF(LEND.GE.START.AND.LEND.LE.END1) NFY=1
      IF(LEND.GT.END1.AND.LEND.LE.END2) NFY=2
      GO TO 556
  888 ERROR=ERROR+1
      GO TO 100
C
C       IDENTIFY THE COMMAND
C
  556 DO 200 J=1,NUMCOM
      KK=ICOLS(J)
      DO 200 K=1,KK
      CODE=0
      IF((RUC.EQ.COMRUC(J,K)).OR.COMRUC(J,K).EQ.0)CODE=1
      IF((NMCC.EQ.COMMCC(J,K)).AND.CODE.EQ.1) JMCC=J
      IF((NMCC.EQ.COMMCC(J,K)).AND.CODE.EQ.1) GO TO 201
      IF (J .EQ. NUMCOM .AND. K .EQ. ICOLS(J)) GO TO 500
  200 CONTINUE
C
C     COLLECT DATA ON UNMATCHED MCC-RUC COMBINATIONS.
C
  500 WRITE (6,510) NCARD,NMCC,RUC
      DO 550 NO=1,1000
      JMCC=NUMCOM+1
      NMCOM2=JMCC
      IF((NMCC.EQ.NOMATC(NO)).AND.(RUC.EQ.NOMAT2(NO)))
     1NFREQ(NO)=NFREQ(NO)+1
      IF((NMCC.EQ.NOMATC(NO)).AND.(RUC.EQ.NOMAT2(NO))) GO TO 201
      IF (NOMATC(NO) .NE. 0.) GO TO 550
      IF (NOMATC(NO).EQ.0.) NFREQ(NO)=1
      IF (NOMATC(NO) .EQ. 0.) NOMATC(NO)=NMCC
      IF (NOMAT2(NO).EQ.0) NOMAT2(NO)=RUC
      IF (NO .GT. NOBIG) NOBIG=NO
      GO TO 201
  550 CONTINUE
C
C       IDENTIFY THE OCCUPATIONAL FIELD
C
  201 DO 250 L=1,NUMOFS
      IF (NOCCUP .EQ. IOCCUP(L)) KOCCUP=L
      IF (NOCCUP .EQ. IOCCUP(L)) GO TO 251
      IF (L .EQ. NUMOFS) GO TO 600
  250 CONTINUE
C
C       COLLECT DATA ON UNMATCHED OCCUPATIONAL FIELDS
C
  600 WRITE (6,610) NCARD,NOCCUP
      IF (NOCCUP .EQ. 00) NOOCUP=NOOCUP+1
      GO TO 100
C
C       INCREMENT THE SEPARATIONS MATRIX
C
```

TABLE B-2 (Cont'd)

```
  251 IFY(NFY,NYRS,JMCC,KOCCUP)=IFY(NFY,NYRS,JMCC,KOCCUP) + 1
  100 CONTINUE
  999 CONTINUE
C
C     WRITE EACH MATRIX TO DISK
C
C     IFY(F,N,J,K): F=FISCAL YEAR OF SEPARATION; N=YEARS-OF-SERVICE
C                   CATEGORY; J=COMMAND; K=OCCUPATIONAL FIELD
C
      DO 300 J=1,NMCOM2
      WRITE (11,1000) (IFY(1,1,J,K),K=1,NUMOFS)
      WRITE (12,1000) (IFY(1,2,J,K),K=1,NUMOFS)
      WRITE (13,1000) (IFY(1,3,J,K),K=1,NUMOFS)
      WRITE (21,1000) (IFY(2,1,J,K),K=1,NUMOFS)
      WRITE (22,1000) (IFY(2,2,J,K),K=1,NUMOFS)
      WRITE (23,1000) (IFY(2,3,J,K),K=1,NUMOFS)
  300 CONTINUE
      WRITE(6,11)
      WRITE(6,555) FAP
      WRITE(6,11)
      WRITE(6,701) ERROR
      WRITE(45,50) NMCOM2
      WRITE(47,50) NUMOFS
      WRITE(6,11)
C
C      LIST MCC-RUC COMBINATIONS FOUND IN MMS,BUT
C      NOT IN THE COMMAND DEFINITIONS
C
      IF (NOBIG.EQ.0) GO TO 801
      WRITE (6,700)
      DO 800 I=1,NOBIG
      WRITE(6,750) NOMATC(I),NOMAT2(I),NFREQ(I)
  800 CONTINUE
      WRITE(6,11)
      WRITE(6,802)
  801 CONTINUE
      WRITE(6,11)
      WRITE (6,900) NOOCUP,NCARD
   10 FORMAT(I1)
   11 FORMAT(1X)
   40 FORMAT (4X,A3,1X,I5)
   45 FORMAT (I3,1X,A3,1X,I5)
   50 FORMAT(I2)
   60 FORMAT(A3,I5,A3,3I2,3I2,I4,I2)
   70 FORMAT (2I3)
  510 FORMAT (1X,'IN RECORD NUMBER ',I10,' THERE IS NO MATCH',
     1' FOR MCC-RUC COMBINATION ',A3,'-',I5)
  555 FORMAT(1X,I8,' RECORDS USED THE FAP MCC.')
  610 FORMAT (1X,'IN RECORD NUMBER ',I10,' THERE IS NO MATCH',
     1' FOR OCCUPATION ', I2)
  666 FORMAT(3I2)
  680 FORMAT ('1',10X,'THE ROW (COMMAND) AND COLUMN (OCCUPATION ',
     1'FIELD) DEFINITIONS FOR THE MATRIX OUTPUT',/,'+',10X,'______',
     2'____________________________________________________',
     3'_____________',//,1X, 'THE OCCUPATION FIELDS ARE LISTED',
     4' BY COLUMNS IN THE OUTPUT MATRIX',/,' IN THE FOLLOWING ORDER:')
  688 FORMAT(1X,'COMMAND ',I3,2X,20A1,' HAS ',I3,' MCC-RUC COMBINATIONS:
     1',4X,3(A3,'-',I5,1X),100(/,58X,4(A3,'-',I5,1X)))
  689 FORMAT(1X,'COMMAND ',I3,2X,20A1,' HAS ',I3,' MCC-RUC COMBINATION:
     1',4X,3(A3,'-',I5,1X),100(/,58X,4(A3,'-',I5,1X)))
  692 FORMAT(1X,50I3)
  700 FORMAT(6X,'MCC-RUC COMBINATIONS THAT ARE NOT IN COMMAND DEFINITION
     1 LIST:',/,/,10X,'MCC',3X,'RUC',7X,'FREQ',/)
  701 FORMAT(1X,I5,' BAD RECORDS WERE FOUND.')
  750 FORMAT(10X,A3,2X,I5,4X,I5)
  770 FORMAT (20A1)
```

TABLE B-2 (Cont'd)

```
  802 FORMAT(1X,'COMBINATION(S) ABOVE IS(ARE) INCLUDED IN COMMAND ''MISC
     12''')
  900 FORMAT(///,1X,'THE NUMBER OF BLANK OCCUPATIONS IS:',I5,
     1/,/,I8,' RECORDS WERE READ',/,/,/)
 1000 FORMAT (5014)
  777 CONTINUE
      END
$
```

APPENDIX C

THE PROGRAM "GOAL"

APPENDIX C

THE PROGRAM "GOAL"

"GOAL" is the program that calculates the command retention goals, given the command scheduled separations and the overall Marine Corps goals for occupational fields and retention categories. Table C-1 is a flowchart for the main program; tables C-2 and C-3 are flowcharts for subroutines "ADD" and "GOAL," to be described below. Table C-4 lists the program.

There are six subroutines: "ADD," "ROWS," "ADJUST," "GOALS," "LARG," and "PCT." Their functions are summarized next:

- "ADD" - Produces a weighted sum of the 2 years' separations matrixes for each retention category
- "ROWS" - Locates the row in the separations matrix that has the data for a named command
- "ADJUST" - Multiplies a specified row of a separation matrix by a given factor
- "GOALS" - Calculates the command goals
- "LARG" - Locates the N largest goals when the Marine Corps goal and the sum of the command goals differ by a nonzero amount of absolute value N
- "PCT" - Calculates the occupational field goals as a percentage of the occupational field scheduled separations by retention category.

To run "GOAL," you must have previously run "SETUP" and created the data card files "INPUT" and "OFGOAL."

"INPUT" needs weights for multiplying the separations for the goal fiscal year (first-year weights). The FY 1981 goals were calculated with a first-year weight of 0.65, because in the previous year about 65 percent of the overall goals were met from the then-current fiscal year separations. The programs allow for using a different weight for each retention category. Enter three weights, whether they differ or not.

If a command goal is to be adjusted, the command name is needed exactly as given in the output of "SETUP" or in the file "NAMES."

TABLE C-1
FLOWCHART: MAIN ROUTINE ("GOAL")

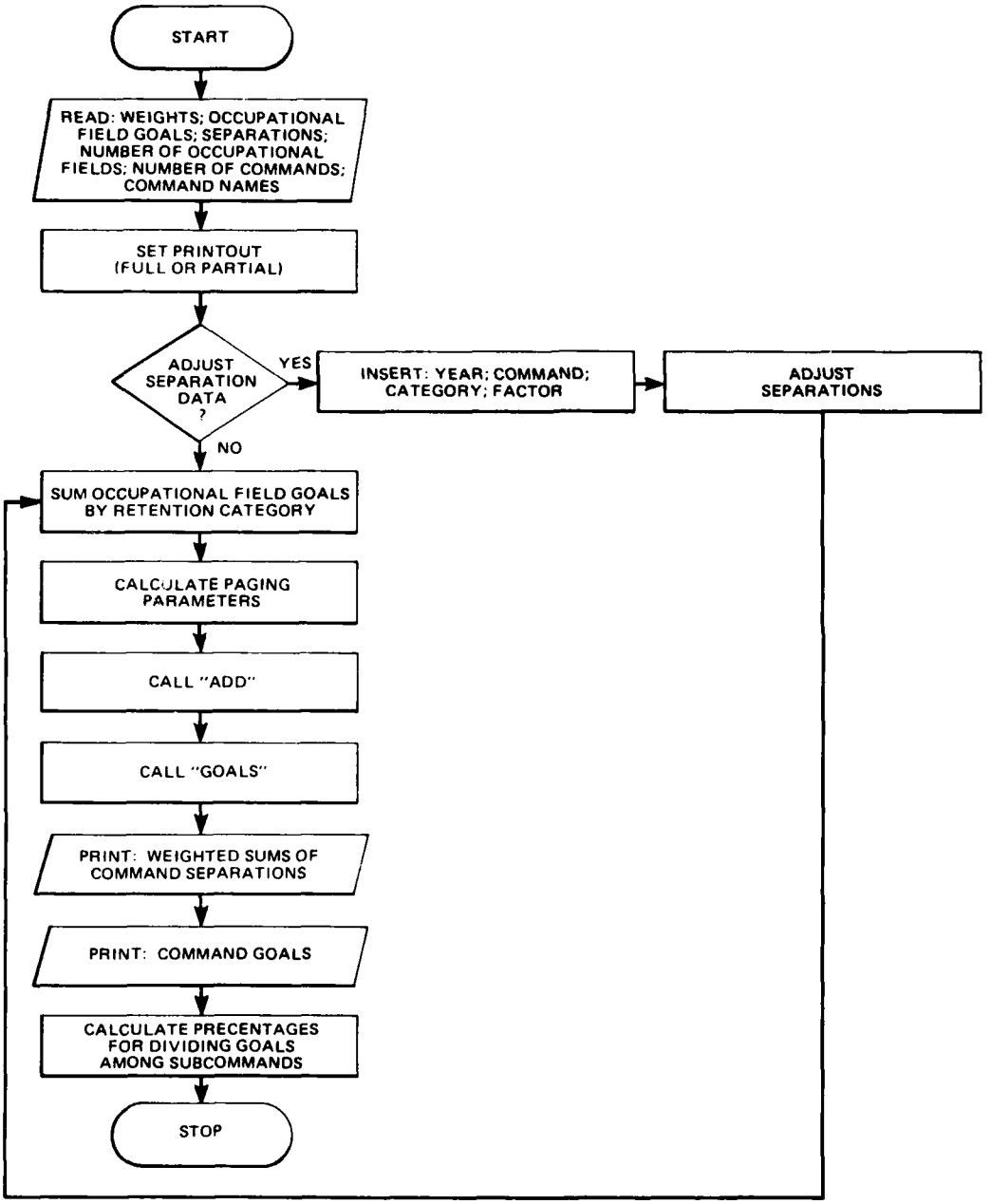
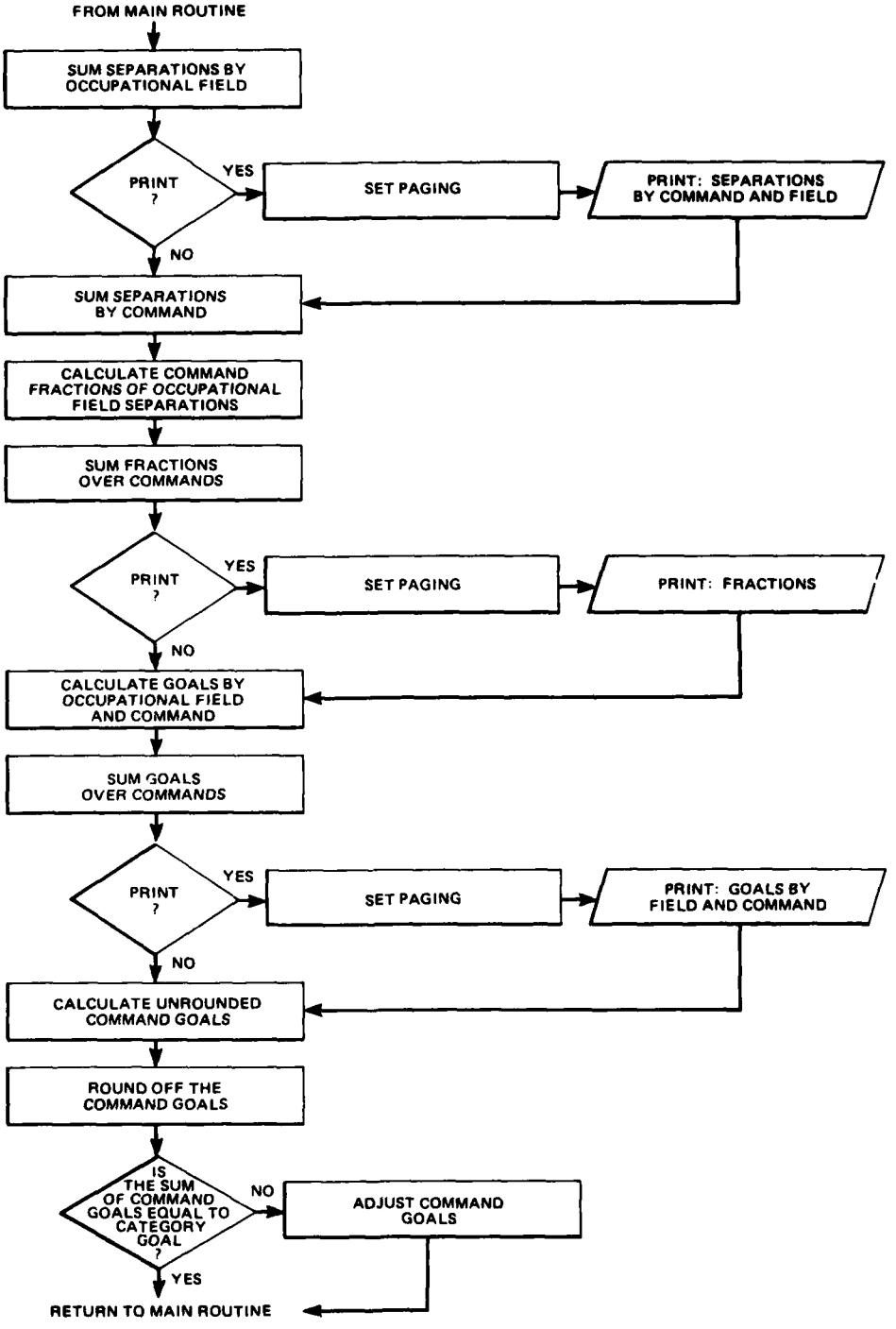


TABLE C-2
FLOWCHART: "GOALS"



Adjustments are made by multiplying separations in the desired category by a factor less than 1. The file "INPUT" identifies the command and category and gives a factor for each fiscal year.

TABLE C-3
FLOWCHART: "ADD"

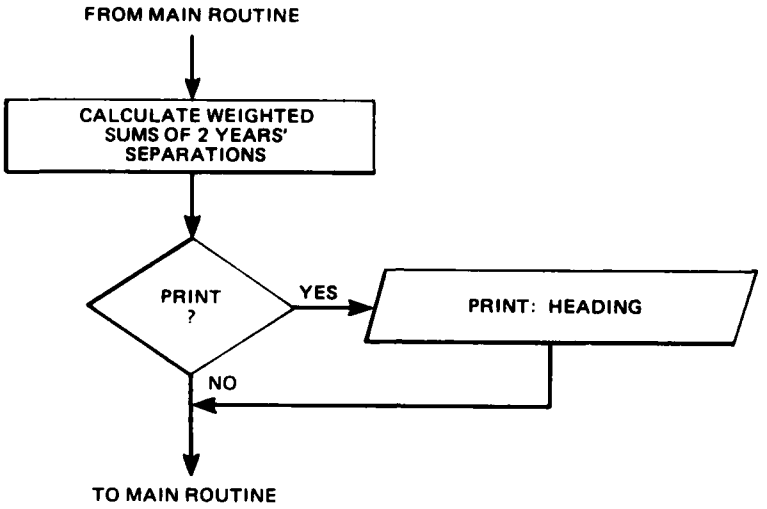


TABLE C-4

PROGRAM LISTING FOR "GOAL"

```
C
C                    THIS PROGRAM CALCULATES RETENTION GOALS, GIVEN
C                    SEPARATION DATA FOR EACH OF 2 FISCAL YEARS.
C
      REAL PCT1(50),PCT2(50),PCT3(50),F1,F2
      INTEGER FY11(100,50),FY12(100,50),FY13(100,50),FY21(100,50),
     1FY22(100,50),FY23(100,50)
      INTEGER CAT,ASK,ROW,TGOAL
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100,50),SEP2(100,50),SEP3(100,50),IFIELD(50),ICOL,
     2IPAGE,NT,IP,M,N,CSEPS(100),OFSEPS(50,3),OFGOAL(50,3),ICOMM(20),
     3W(3)
C
C     READ NUMBERS OF COMMANDS (M) AND OCCUPATIONAL FIELDS (N)
C
      READ(45,87) M
      READ(47,87) N
C
C     READ OVERALL GOALS AND OCCUPATIONAL FIELDS
C
      DO 27 J=1,N
      READ (1,80)(OFGOAL(J,I),I=1,3)
      READ (25,86)(IFIELD(J))
   27 CONTINUE
C
C     READ SEPARATIONS MATRIXES AND COMMAND NAMES
C
      DO 17 I=1,M
      READ (11,82,END=444) (FY11(I,J),J=1,N)
      READ (12,82,END=444) (FY12(I,J),J=1,N)
      READ (13,82,END=444) (FY13(I,J),J=1,N)
      READ (21,82,END=444) (FY21(I,J),J=1,N)
      READ (22,82,END=444) (FY22(I,J),J=1,N)
      READ (23,82,END=444) (FY23(I,J),J=1,N)
      READ (24,84,END=444) (NAMES(I,J),J=1,20)
   17 CONTINUE
C
C     READ WEIGHTS FOR THE FIRST FISCAL YEAR
C
    2 CONTINUE
      READ (8,97) W
      WRITE (6,55)
      WRITE(6,57) W(1),W(2),W(3)
      WRITE (6,108)
      IF((W(1.0).LE.1.0).AND.(W(2).LE.1.0).AND.(W(3).LE.1.0))GO TO 4
      WRITE (6,56)
      GO TO 2
C
C         SELECT FULL OR NORMAL PRINTOUT.
C
    4 WRITE (6,58)
      READ (8,64) IP
      IF ((IP.NE.0).AND.(IP.NE.1)) GO TO 4
C
      GO TO 26
  444 WRITE(6,777)
      GO TO 93
C
C         CHANGE SOME SEPARATIONS DATA,IF DESIRED
C
```

TABLE C-4 (Cont'd)

```
   26 CONTINUE
      READ (9,64) ASK
      IF (ASK.EQ.1) GO TO 89
      GO TO 50
   89 WRITE (6,66)
      READ (8,84) ICOMM
      CALL ROWS (ICOMM,ROW)
      IF (ROW.LE.M) GO TO 30
      WRITE (6,68) ICOMM
      GO TO 93
   30 CONTINUE
      WRITE (6,70)
      READ (8,64) CAT
      IF ((CAT.EQ.1).OR.(CAT.EQ.2).OR.(CAT.EQ.3)) GO TO 32
      WRITE (6,91) CAT
      GO TO 93
   32 WRITE (6,74)
      READ (8,95) F1,F2
      WRITE(6,555)((NAMES(ROW,J),J=1,20),CAT,F1,F2)
  555 FORMAT (1X,20A1,' CATEGORY ',I1,'   FACTORS: ',F6.3,F6.3)
      IF (CAT.NE.1) GO TO 38
      CALL ADJUST (FY11,ROW,F1)
      CALL ADJUST (FY21,ROW,F2)
      GO TO 42
   38 IF (CAT.NE.2) GO TO 40
      CALL ADJUST (FY12,ROW,F1)
      CALL ADJUST (FY22,ROW,F2)
      GO TO 42
   40 IF (CAT.NE.3) GO TO 32
      CALL ADJUST (FY13,ROW,F1)
      CALL ADJUST (FY23,ROW,F2)
   42 CONTINUE
      WRITE(6,660)
      READ(8,64) ASK
   50 IF (ASK.EQ.1) GO TO 26
C
C          SUM RETENTION CATEGORY GOALS
C
      DO 52 K=1,3
      ICTGOL(K)=0
      DO 52 I=1,N
      ICTGOL(K)=ICTGOL(K)+OFGOAL(I,K)
C
C          CALCULATE PARAMETERS FOR PAGING DETAILED OUTPUT
C
   52 CONTINUE
      NT=12
      IPAGE=1+(N/NT)
      ICOL=(((1+(N/NT))-IPAGE)*NT)+0.1
C
C          MAKE WEIGHTED SUMS OF SEPARATIONS AND CALCULATE GOALS
C
      CALL ADD (FY11,FY21,SEP1,1)
      CALL GOALS (SEP1,1,4)
      CALL ADD (FY12,FY22,SEP2,2)
      CALL GOALS (SEP2,2,5)
      CALL ADD (FY13,FY23,SEP3,3)
      CALL GOALS (SEP3,3,6)
C
C          PRINT SUMMARY SEPARATIONS DATA
C
      WRITE (6,108)
      WRITE (6,104)
      WRITE (6,92)
      WRITE (6,94)
      WRITE (6,94)
```

TABLE C-4 (Cont'd)

```
      WRITE (6,98) (((NAMES(I,J),J=1,20),(IRESLT(I,J),J=1,3)),I=1,M)
      WRITE (6,100)
      WRITE (6,102) (IRES(I),I=1,3)
C
C         PRINT SUMMARY GOALS DATA
C
      WRITE (6,108)
      WRITE (6,88)
      WRITE (6,92)
      WRITE (6,94)
      WRITE (6,96)
      WRITE (6,98) (((NAMES(I,J),J=1,20),(IRESLT(I,J),J=4,6),I=1,M))
      WRITE (6,100)
      WRITE (6,102) (IRES(I),I=4,6)
      TGOAL=0
      DO 22 I=1,3
      TGOAL=TGOAL+ICTGOL(I)
   22 CONTINUE
      WRITE (6,108)
      WRITE (6,222) TGOAL
      WRITE (6,108)
C
C        PRINT OVERALL OCCUPATIONAL FIELD GOALS (INPUT)
C
      WRITE (6,108)
      WRITE (6,111)
      WRITE (6,113)
      WRITE (6,114)
      WRITE (6,116)
      WRITE (6,118)
      WRITE (6,121) (IFIELD(I),(OFGOAL(I,J),J=1,3),I=1,N)
      WRITE (6,122)
      WRITE (6,123) (ICTGOL(K),K=1,3)
      CALL PCT (FY11,FY21,PCT1,1)
      CALL PCT (FY12,FY22,PCT2,2)
      CALL PCT (FY13,FY23,PCT3,3)
C
C          PRINT PERCENTAGES FOR DIVIDING COMMAND GOALS
C
      WRITE (6,108)
      WRITE (6,110)
      WRITE (6,112)
      WRITE (6,114)
      WRITE (6,116)
      WRITE (6,118)
      WRITE (6,120) ((IFIELD(I),PCT1(I),PCT2(I),PCT3(I)),I=1,N)
      WRITE(6,108)
      WRITE(6,108)
      DO 99 J=1,N
      IF (PCT1(J).LE.100.0) GO TO 99
      WRITE(6,108)
      WRITE(6,999) IFIELD(J)
  999 FORMAT(1X,'WARNING: FIRST-TERM GOAL FOR FIELD',I4,' IS OVER 100 PE
     *RCENT',/,10X,'OF THE SCHEDULED SEPARATIONS IN MMS.')
   99 CONTINUE
      DO 33 J=1,N
      IF (PCT2(J).LE.100.0) GO TO 33
      WRITE(6,108)
      WRITE(6,333) IFIELD(J)
  333 FORMAT(1X,'WARNING: INTERMEDIATE GOAL FOR FIELD',I4,' IS OVER 100
     *PERCENT',/,10X,'OF THE SCHEDULED SEPARATIONS IN MMS.')
   33 CONTINUE
      DO 35 J=1,N
      IF (PCT3(J).LE.100.0) GO TO 35
      WRITE(6,108)
      WRITE(6,355) IFIELD(J)
```

TABLE C-4 (Cont'd)

```
  355 FORMAT(1X,'WARNING: CAREER GOAL FOR FIELD',I4,' IS OVER 100 PERCEN
     *T',/,10X,'OF THE SCHEDULED SEPARATIONS IN MMS.')
   35 CONTINUE
   93 STOP
C
C
C
   55 FORMAT (1X,'WEIGHT FACTORS FOR THE FIRST FISCAL YEAR ARE:')
   57 FORMAT(31X,F5.2,' (FIRST-TERM)',/,31X,F5.2,' (INTERMEDIATE)',/,31X
     1,F5.2,' (CAREER)')
   56 FORMAT (1X,'WARNING:WEIGHTS FOR THE 2 YEARS SHOULD ADD TO 1.')
   58 FORMAT (1X,'ENTER ''0'' OR ''1'' FOR NORMAL OR FULL OUTPUT,RESPECT
     1IVELY.')
  660 FORMAT (1X,'DO YOU WISH TO ADJUST ANY MORE SEPARATIONS?')
   64 FORMAT (I1)
   66 FORMAT (1X,'NAME THE COMMAND FOR ADJUSTMENT')
   68 FORMAT(1X,'WARNING:INSERT THE EXACT COMMAND NAME. YOU USED ',20A1)
   70 FOUMAT (1X,'NAME A RETENTION CATEGORY FOR ADJUSTMENT(1ST TERM=1,IN
     1TER.=2,CAREER-3)')
   74 FORMAT (1X,'INSERT A MULTIPLICATIVE FACTOR FOR EACH FISCAL YEAR.')
   80 FORMAT (3F5.0)
   82 FORMAT (50I4)
   84 FORMAT (20A1)
   86 FORMAT (I2)
   87 FORMAT (I2)
   88 FORMAT (35X,'GOALS',/,35X,'-----')
   91 FORMAT (1X,'WARNING:CATEGORY MUST BE 1, 2, OR 3. YOU USED ',I1)
   92 FORMAT (26X,'FIRST    INTER-')
   94 FORMAT (1X,'COMMANDS                    TERM    MEDIATE   CAREER')
   95 FORMAT (2F6.3)
   96 FORMAT (1X,'--------                    ----    -------   ------')
   98 FORMAT (1X,20A1,I9,I10,I9)
  100 FORMAT (1X,'-------------------------------------------------')
  102 FORMAT (3X,'TOTALS             ',I9,I10,I9)
  104 FORMAT(30X,'WEIGHTED SUM OF',/,32X,'SEPARATIONS',/,32X,'----------
     *-')
  108 FORMAT (1X)
  110 FORMAT (20X,'PERCENTAGES')
  111 FORMAT (19X,'OVERALL GOALS')
  112 FORMAT (1X,'OCCUPA-              -----------')
  113 FORMAT (1X,'OCCUPA-             -------------')
  114 FORMAT (1X,'TIONAL       FIRST      INTER-    ')
  116 FORMAT (1X,'FIELDS       TERM      MEDIATE   CAREER')
  118 FORMAT (1X,'------       -----     -------   ------')
  120 FORMAT (1X,I4,3X,3F10.1)
  121 FORMAT (1X,I4,3X,3F10.0)
  122 FORMAT (1X,'-------------------------------------')
  123 FORMAT (1X,'TOTALS',3I10)
  222 FORMAT (1X,' TOTAL GOAL IS ',I6)
   97 FORMAT (3F6.3)
  777 FORMAT (1X,'WARNING: YOU RAN OUT OF DATA TOO SOON')
      END
C
C          'ADD' PRODUCES A WEIGHTED SUM OF TWO YEARS' SEPARATION DATA
C
C
      SUBROUTINE ADD (YR1,YR2,SEPPS,K)
C
      INTEGER YR1(100,50),YR2(100,50)
      REAL SEPPS(100,50)
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100,50),SEP2(100,50),SEP3(100,30),IFIELD(30),ICOL,
     2IPAGE,NT,IP,M,N,CSEPS(100),OFSEPS(50,3),OFGOAL(50,3),ICOMM(20),
     3W(3)
C
      DIMENSION RES(3)
```

TABLE C-4 (Cont'd)

```
      RES(K)=0.
      DO 2 I=1,M
      DO 2 J=1,N
      SEPPS(I,J)=(W(K)*YR1(I,J))+((1-W(K))*YR2(I,J))
      RES(K)=RES(K)+SEPPS(I,J)
    2 CONTINUE
      IRES(K)=RES(K)+0.5
C
C           PRINT THE HEADING FOR THE DETAILED OUTPUT
C
      IF (IP.EQ.0) GO TO 12
      WRITE (6,20)
      GO TO (4,6,8), K
    4 WRITE (6,14)
      GO TO 10
    6 WRITE (6,16)
      GO TO 10
    8 WRITE (6,18)
   10 WRITE (6,20)
      WRITE (6,22)
   12 RETURN
C
   14 FORMAT (1X,'FIRST-TERMERS',/,1X,'--------------')
   16 FORMAT (1X,'INTERMEDIATES',/,1X,'--------------')
   18 FORMAT (1X,'CAREER MARINES',/,1X,'---------------')
   20 FORMAT (1X)
   22 FORMAT (1X,'SEPARATIONS',/,1X,'------------')
      END
C
C           'PCT' CALCULATES THE OCCUPATIONAL FIELD GOALS AS
C           PERCENTAGES OF THE SIMPLE SUMS OF TWO YEARS'
C           SEPARATION DATA
C
C
      SUBROUTINE PCT (YR1,YR2,PERC,K)
C
      REAL PERC(50),SEPPS(100,50)
      INTEGER YR1(100,50),YR2(100,50)
      REAL FSEPS(50,3)
      INTEGER ISEP
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100,50),SEP2(100,50),SEP3(100,50),IFIELD(50),ICOL,
     2IPAGE,NT,IP,M,N,CSEPS(100),OFSEPS(50,3),OFGOAL(50,3),ICOMM(20),
     3W(3)
      DO 2 I=1,M
      DO 2 J=1,N
      SEPPS(I,J)=YR1(I,J)+YR2(I,J)
    2 CONTINUE
      DO 4 J=1,N
      FSEPS(J,K)=0
      DO 4 I=1,M
      FSEPS(J,K)=FSEPS(J,K)+SEPPS(I,J)
    4 CONTINUE
      DO 6 J=1,N
      IF (FSEPS(J,K).EQ.0.) GO TO 6
      PERC(J)=100*OFGOAL(J,K)/FSEPS(J,K)
    6 CONTINUE
      RETURN
      END
C
C           'GOALS' CALCULATES THE COMMAND GOALS,GIVEN THE
C           WEIGHTED SUMS OF SEPARATIONS
C
      SUBROUTINE GOALS (SEPPS,K,L)
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100,50),SEP2(100,50),SEP3(100,50),IFIELD(50),ICOL,
```

TABLE C-4 (Cont'd)

```
     2IPAGE,NT,IP,M,N,CSEPS(100),OFSEPS(50,3),OFGOAL(50,3),ICOMM(20),
     3W(3)
      REAL COMGOL(100),RATIO,RGOAL
      INTEGER Z,INT,II,LL,LLL,KK,KKK
      DIMENSION SEPPS(100,50), LOC(100), SUM(50), SUMM(50)
      DIMENSION DASH(24),DASH2(12)
      DATA DASH/24*'----'/
      DATA DASH2/12*'    '/
      DO 2 J=1,N
      SUM(J)=0.
      SUMM(J)=0.
    2 CONTINUE
      Z=0
C
C           CALCULATE TOTAL SEPARATIONS BY OCCUPATIONAL FIELD
C
      DO 4 I=1,M
      CSEPS(I)=0.
    4 CONTINUE
      DO 6 J=1,N
      OFSEPS(J,K)=0.
      DO 6 I=1,M
      OFSEPS(J,K)=OFSEPS(J,K)+SEPPS(I,J)
    6 CONTINUE
      IF (IP.EQ.0) GO TO 10
C
C           SET PAGING AND PRINT DETAILED SEPARATIONS OUTPUT
C
      DO 8 II=1,IPAGE
      IF ((ICOL.EQ.0).AND.(II.EQ.IPAGE)) GO TO 10
      KK=1+(II-1)*NT
      KKK=KK+NT-1
      IF (II.EQ.IPAGE) KK=1+N-ICOL
      IF (II.EQ.IPAGE) KKK=N
      LL=(1+KKK-KK)
      LLL=2*LL
      WRITE (6,56)
      WRITE (6,60) ((IFIELD(J),J=KK,KKK))
      WRITE (6,62) (DASH(J),J=1,LL)
      DO 11 I=1,M
      WRITE (6,64) ((NAMES(I,J),J=1,20),(SEPPS(I,J),J=KK,KKK))
   11 CONTINUE
      WRITE (6,66) (DASH(J),J=1,LLL)
      WRITE (6,68) ((OFSEPS(J,K),J=KK,KKK))
      WRITE (6,54)
    8 CONTINUE
   10 CONTINUE
C
C           CALCULATE SEPARATIONS BY COMMAND
C
      DO 12 I=1,M
      DO 13 J=1,N
      CSEPS(I)=CSEPS(I)+SEPPS(I,J)
   13 CONTINUE
   12 CONTINUE
      DO 14 I=1,M
      IRESLT(I,K)=CSEPS(I)+0.5
   14 CONTINUE
C
C                     CONVERT SEPARATIONS TO FRACTIONS OF OCCUPATIONAL
C                     FIELD SEPARATIONS.
C
      DO 16 I=1,M
      DO 17 J=1,N
      IF (OFSEPS(J,K).EQ.0.) GO TO 17
      SEPPS(I,J)=SEPPS(I,J)/OFSEPS(J,K)
```

TABLE C-4 (Cont'd)

```
   17 CONTINUE
   16 CONTINUE
C
C           SUM FRACTIONS OVER COMMANDS,BY OCCUPATIONAL FIELD
C
      DO 18 J=1,N
      DO 19 I=1,M
      SUM(J)=SUM(J)+SEPPS(I,J)
   19 CONTINUE
   18 CONTINUE
      IF (IP.EQ.0) GO TO 22
      WRITE (6,76)
C
C           SET PAGING AND PRINT DETAILED FRACTIONS OUTPUT
C
      DO 20 II=1,IPAGE
      IF ((ICOL.EQ.0).AND.(II.EQ.IPAGE)) GO TO 22
      KK=1+(II-1)*NT
      KKK=KK+NT-1
      IF (II.EQ.IPAGE) KK=1+N-ICOL
      IF (II.EQ.IPAGE) KKK=N
      LL=(1+KKK-KK)
      LLL=2*LL
      WRITE (6,56)
      WRITE (6,60) ((IFIELD(J),J=KK,KKK))
      WRITE (6,62) (DASH(J),J=1,LL)
      DO 21 I=1,M
      WRITE (6,74) ((NAMES(I,J),J=1,20),(SEPPS(I,J),J=KK,KKK))
   21 CONTINUE
      WRITE (6,66) (DASH(J),J=1,LLL)
      WRITE (6,70) ((SUM(J),J=KK,KKK))
      WRITE (6,54)
   20 CONTINUE
   22 CONTINUE
C
C                     CONVERT FRACTIONS TO OCCUPATIONAL FIELD GOALS.
C
      DO 24 I=1,M
      DO 25 J=1,N
      SEPPS(I,J)=SEPPS(I,J)*OFGOAL(J,K)
   25 CONTINUE
   24 CONTINUE
C
C           CALCULATE SUMS OF OCCUPATIONAL FIELD GOALS
C
      DO 26 J=1,N
      DO 27 I=1,M
      SUMM(J)=SUMM(J)+SEPPS(I,J)
   27 CONTINUE
   26 CONTINUE
C
C           SET PAGING AND PRINT COMMAND OCCUPATIONAL FIELD GOALS
C
      IF (IP.EQ.0) GO TO 32
      WRITE (6,54)
      WRITE (6,78)
      WRITE (6,80)
      DO 89 II=1,IPAGE
      IF ((ICOL.EQ.0).AND.(II.EQ.IPAGE)) GO TO 30
      KK=1+(II-1)*NT
      KKK=KK+NT-1
      IF (II.EQ.IPAGE) KK=1+N-ICOL
      IF (II.EQ.IPAGE) KKK=N
      LL=(1+KKK-KK)
      LLL=2*LL
      WRITE (6,56)
```

TABLE C-4 (Cont'd)

```
      WRITE (6,60) ((IFIELD(J),J=KK,KKK))
      WRITE (6,62) (DASH(J),J=1,LL)
      DO 15 I=1,M
      WRITE (6,74) ((NAMES(I,J),J=1,20),(SEPPS(I,J),J=KK,KKK))
   15 CONTINUE
      WRITE (6,66) (DASH(J),J=1,LLL)
      WRITE (6,72) ((SUMM(J),J=KK,KKK))
      WRITE (6,54)
   89 CONTINUE
   30 CONTINUE
   32 CONTINUE
C
C     CALCULATE COMMAND GOALS
C
   36 RGOAL=0
      DO 34 I=1,M
      COMGOL(I)=0.
      DO 35 J=1,N
      COMGOL(I)=COMGOL(I)+SEPPS(I,J)
   35 CONTINUE
      ICGOAL(I)=COMGOL(I)+0.5
      RGOAL=RGOAL+ICGOAL(I)
   34 CONTINUE
C
C           COMPARE CATEGORY GOALS TO SUMS OF COMMAND GOALS AND ADJUST
C
      RATIO=ICTGOL(K)/RGOAL
      IF (RATIO.EQ.1.0) GO TO 42
      IF (Z.EQ.1) GO TO 42
      DO 40 I=1,M
      COMGOL(I)=COMGOL(I)*RATIO
   40 CONTINUE
      Z=1
      GO TO 36
   42 CONTINUE
      INT=ICTGOL(K)-RGOAL
      IF (INT.EQ.0) GO TO 48
      SIGN=1
      IF (INT.LT.0) SIGN=-1
      IF (INT.LT.0) INT=-INT
C
C           FIND LARGEST COMMAND GOALS FOR ADJUSTING TO MAKE
C           SUM OF COMMAND GOALS EQUAL CATEGORY GOALS
C
      CALL LARG (INT,M,LOC,ICGOAL)
      DO 46 J=1,INT
      DO 44 MM=1,M
      Z=LOC(J)
      IF (MM.EQ.Z) ICGOAL(MM)=ICGOAL(MM)+SIGN
      IF (MM.EQ.Z) GO TO 46
   44 CONTINUE
   46 CONTINUE
   48 CONTINUE
C
C           PUT COMMAND GOALS IN OUTPUT MATRIX
C
      DO 50 I=1,M
      IRESLT(I,L)=ICGOAL(I)
   50 CONTINUE
C
C           PUT SUM OF COMMAND GOALS IN OUTPUT VECTOR
C
      IRES(L)=0
      DO 52 I=1,M
      IRES(L)=IRES(L)+IRESLT(I,L)
   52 CONTINUE
```

TABLE C-4 (Cont'd)

```
      RETURN
C
C
C
   54 FORMAT (1X)
   56 FORMAT (/,61X,'OCCUPATIONAL FIELD',/,61X,'------------ -----')
   60 FORMAT (1X,'COMMAND',13X,12I8)
   62 FORMAT (1X,'-------',18X,12(A4,4X))
   64 FORMAT (1X,20A1,1X,12(F8.1))
   66 FORMAT (1X,'--------------------',24A4)
   68 FORMAT (22X,12F8.1)
   70 FORMAT (22X,12F8.2)
   72 FORMAT (22X,12F8.2)
   74 FORMAT (1X,20A1,1X,12F8.2)
   76 FORMAT (/,1X,'FRACTIONS',/,1X,'---------')
   78 FORMAT (1X,'OCCUPATIONAL FIELD GOALS')
   80 FORMAT (1X,'------------ ----- -----')
      END
C
C           'LARG' FINDS THE LOCATIONS OF THE N LARGEST
C           COMMAND GOALS, WHERE N IS THE ROUNDOFF DISCREPANCY
C
      SUBROUTINE LARG (N,M,IH1,ARRAY)
C
      INTEGER ARRAY(100), IH1(100), IH2(100)
      DO 2 I=1,N
C
C           FIRST 'DO' LOOPS FIND AN INITIAL CANDIDATE FOR A VECTOR
C           OF LOCATIONS OF THE N LARGEST COMMAND GOALS
C
    2 IH1(I)=I
    4 DO 12 J=1,M
      DO 10 I=1,N
      Z=IH1(I)
      IF (ARRAY(Z).GT.ARRAY(J)) GO TO 10
      IF ((ARRAY(Z).EQ.ARRAY(J)).AND.(Z.NE.J)) GO TO 10
      IF (J.EQ.M) GO TO 8
      DO 6 K=1,N
      IF ((IH1(K).EQ.J).AND.(K.NE.I)) GO TO 12
    6 CONTINUE
    8 IH1(I)=J
      GO TO 12
   10 CONTINUE
   12 CONTINUE
C
C           MAKE A COPY OF THE INITIAL CANDIDATE
C
      DO 14 I=1,N
      IH2(I)=IH1(I)
   14 CONTINUE
      DO 22 J=1,M
      DO 20 I=1,N
      Z=IH2(I)
C
C           CHECK FOR INDEXES THAT GIVE LARGER GOALS, BUT THAT
C           ARE NOT IN THE LATEST CANDIDATE
C
      IF (ARRAY(Z).GT.ARRAY(J)) GO TO 20
      IF ((ARRAY(Z).EQ.ARRAY(J)).AND.(Z.NE.J)) GO TO 20
      IF (J.EQ.M) GO TO 18
      DO 16 K=1,N
      IF ((IH2(K).EQ.J).AND.(K.NE.I)) GO TO 22
   16 CONTINUE
   18 IH2(I)=J
      GO TO 22
   20 CONTINUE
```

TABLE C-4 (Cont'd)

```
   22 CONTINUE
C
C           CHECK WHETHER LATEST CANDIDATE IS EQUAL TO THE
C           PREVIOUS CANDIDATE
C
      DO 24 I=1,N
      IF (IH1(I).NE.IH2(I)) GO TO 26
   24 CONTINUE
      GO TO 30
C
C           START WITH THE NEW CANDIDATE
C
   26 DO 89 I=1,N
      IH1(I)=IH2(I)
   89 CONTINUE
C
C           REPEAT UNTIL NO CHANGE OCCURS
C
      GO TO 4
   30 CONTINUE
      RETURN
      END
C
C           'ROWS' IDENTIFIES THE ROW IN WHICH DATA FOR A GIVEN
C           COMMAND ARE LOCATED
C
      SUBROUTINE ROWS (X,ROW)
C
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100,50),SEP2(100,50),SEP3(100,50),IFIELD(50),ICOL,
     2IPAGE,NT,IP,M,N,CSEPS(100),OFSEPS(50,3),OFGOAL(50,3),ICOMM(20),
     3W(3)
      INTEGER X(20),ROW
      ROW=M+1
      DO 4 I=1,M
      DO 2 J=1,20
      IF (X(J).NE.NAMES(I,J)) GO TO 4
      IF (J.EQ.20) ROW=I
    2 CONTINUE
    4 CONTINUE
      RETURN
      END
C
C           'ADJUST' MULTIPLIES A ROW IN A SEPARATIONS DATA
C           MATRIX BY A GIVEN FACTOR
C
      SUBROUTINE ADJUST (FYIN,X,FACTOR)
C
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100,50),SEP2(100,50),SEP3(100,50),IFIELD(50),ICOL,
     2IPAGE,NT,IP,M,N,CSEPS(100),OFSEPS(50,3),OFGOAL(50,3),ICOMM(20),
     3W(3)
      INTEGER X
      INTEGER FYIN(100,50)
      REAL FACTOR
      DO 2 K=1,N
      FYIN(X,K)=FYIN(X,K)*FACTOR
    2 CONTINUE
      RETURN
      END
```

APPENDIX D

FILE DESCRIPTIONS

APPENDIX D

FILE DESCRIPTIONS

This appendix gives samples and formats for all the card input files. These include the input to "SETUP" ("MCC," "CHOICE," "IFIELD," and "NAMES") and the card input to "GOAL" ("OFGOAL" and "INPUT"). These do not include the files created by "SETUP" for "GOAL" ("M," "N," "FY11," "FY12," "FY13," "FY21," "FY22," and "FY23"), or the MMS extract tape input (for which, see appendix A).

TABLE D-1

FILE 1 - "OFGOAL"

507	325	270
32	105	68
1778	347	440
109	88	117
93	96	72
76	0	53
189	149	98
7	11	5
1	5	4
111	61	62
103	83	71
27	38	29
283	176	154
92	44	45
136	176	154
533	252	282
46	21	17
216	78	90
145	74	55
224	132	162
93	105	62
12	44	40
17	21	23
21	25	13
51	12	27
51	12	17
27	17	17
146	39	38
162	149	90
119	313	315
225	65	52
61	70	60
61	70	60
93	36	35
62	60	61
4	19	10
22	47	47
44	46	21
27	11	24
0	0	243

CONTENTS: OVERALL MARINE CORPS GOALS IN ORDER OF FIELD (ROWS, AS IN FILE 25) AND RETENTION CATEGORY (COLUMNS:FIRST-TERM, INTERMEDIATE, AND CAREER).

FORMAT: 3F5.0 FOR EACH LINE

NOTE: THESE MUST BE GOALS FOR RETENTION OF PERSONS PRESENTLY IN THE INDICATED FIELD.

TABLE D-2

FILE 8 - "INPUT"
(Example With One Data Adjustment)

```
   0.5   0.5   0.6
0
1
MCDEC
2
  0.65  0.65
C
```

CONTENTS: FIRST FISCAL-YEAR WEIGHTS BY RETENTION CATEGORY, INDEX TO SET OUTPUT ("0"=NORMAL,"1"=DETAILED), INDEX TO SELECT SEPARATIONS ADJUSTMENT ("0"=NO,"1"=YES), COMMAND NAME FOR ADJUSTMENT, RETENTION CATEGORY FOR ADJUSTMENT (1,2, OR 3 IN THE USUAL ORDER), THE ADJUSTMENT FACTORS FOR THE TWO FISCAL YEARS AND AN INDEX TO SELECT FURTHER ADJUSTMENTS. CARDS 3 TO 5 SET THE ADJUSTMENTS FOR ONE COMMAND AND ONE RETENTION CATEGORY. ADJUSTMENTS FOR OTHER COMMANDS OR CATEGORIES ARE SET BY INSERTING SIMILAR 4-CARD SETS BEFORE THE FINAL CARD OF "INPUT".

FORMAT: 3F6.3,/,I1,/,I1,/,20A1,/,I1,/,2F6.3,/,I1

TABLE D-3

FILE 24 - "NAMES"

FMFLANT
FMFPAC
1ST MARDIV
2D MARDIV
3D MARDIV
4TH MARDIV
1ST MAR BDE
1ST MAW
2D MAW
3D MAW
4TH MAW
1ST FSSG
2D FSSG
3D FSSG
MCRD SAN DIEGO
MCRD PARRIS ISLAND
MCAGCC
MCLB BARSTOW
MCLB ALBANY
MARCORPINCEN
MCB CAMLEJ
MCB CAMPEN
MCB CAMBUT
MCCDC
MATSG-90
1ST MCD
4TH MCD
6TH MCD
8TH MCD
9TH MCD
12TH MCD
MCAS YUMA
MCAS EL TORO
MCAS IWAKUNI
MCAS CHERRY PT
MCAS KANEOHE BAY
MCAS BEAUFORT
MCAS NEW RIVER
MCAS TUSTIN
MCAF FUTEMA
MSG BN
1ST RADIO BN
MCTSSA
MARSPTBN

TABLE D-3 (Cont'd)

```
LFTCPAC
LFTCLANT
HQBN HQMC
MARDET FT LEAVENWORTH
MB BRUNSWICK
MB CONCORD
MB EARLE
MB FALLBROOK
MB NEW LONDON
MB SEAL BEACH
MB NORTH ISL
MB ALAMEDA
MB WASH DC
MB ANNAPOLIS
MB CECIL FIELD
MB CHARLESTON
MB LEMOORE
MB PORTSMOUTH
MB VALLEJO
MB WHIDBEY
MB YORKTOWN
MB BANGOR WA
MAD PT MAGU
MATSG CORPUS CHRISTI
MATSG LAKEHURST
MATSG PATUXANT
MATSG PENSACOLA
MATSG MERIDIAN
MISC1
J9M
MISC2
```

CONTENTS: COMMAND TITLES
FORMAT: 20A1 FOR EACH LINE
NOTE: THE LAST COMMAND LISTED MUST BE "MISC2".

TABLE D-4

FILE 25 - "IFIELD"

1
2
3
4
8
11
13
14
15
16
21
23
25
26
28
30
31
33
34
35
40
41
43
44
46
55
57
58
59
60
61
63
64
65
68
70
72
73
99

CONTENTS: OCCUPATIONAL FIELDS IN THE SAME ORDER AS IN FILE 1 (TABLE C-1)
FORMAT: I2 FOR EACH LINE

TABLE D-5

FILE 40 - "MCC"
(A Partial Listing)

```
1 111 00000
1 116 20001
1 14F 00000
1 ACF 00000
1 1CF 00000
1 1CY 00000
1 1DL 00000
1 1EE 00000
1 226 00000
1 312 00000
1 313 00000
1 314 00000
1 315 00000
1 316 00000
1 317 00000
1 320 00000
1 322 00000
1 326 00000
1 327 00000
1 328 00000
1 413 00000
1 434 00000
1 439 00000
1 444 00000
1 446 00000
1 452 00000
1 459 00000
1 460 00000
1 466 00000
1 468 00000
1 471 00000
1 473 00000
1 478 00000
1 528 00000
1 535 00000
1 543 00000
1 544 00000
1 551 00000
1 553 00000
1 554 00000
```

CONTENTS: ORDINAL COMMAND NUMBER (IN THE ORDER OF FILE 24 ("NAMES", TABLE D-3)), MCC, RUC (OR 00000 IF ALL RUC'S IN THE MCC ARE INCLUDED).

FORMAT: I3,1X,A3,1X,I5 FOR EACH LINE

TABLE D-6

FILE 80 - "CHOICE"

```
1
811001
  5 10
```

CONTENTS: RUN MODE SELECTOR ("0"= LIST INPUT, "1"= LIST INPUT AND CALCULATE SEPARATION MATRIXES), FISCAL YEAR OF GOALS TO BE CALCULATED (YEAR, MONTH, DAY), CUTOFF YEARS FOR YEARS-OF-SERVICE CATEGORIES.

FORMAT: I1,/,3I2,/,2I3

APPENDIX E

VARIABLES IN THE PROGRAMS

APPENDIX E

VARIABLES IN THE PROGRAMS

This appendix lists and defines the variables used in "SETUP" and "GOAL."

"SETUP"

The integer variables in "SETUP" are:

IFY - The separations matrix

IOCCUP - The occupational fields (numbers)

NAMES - Command names

ICOUNT - Command ordinal numbers

NOMAT2 - List of RUCs associated with MCCs in NOMATC (see real variables below)

NFREQ - Frequencies of unmatched combinations

COMRUC - The defining RUCs (columns) by command (rows)

NOBIG - The number of unmatched MCC-RUC combinations

ICOLS - The numbers of MCC-RUC combinations in the definitions of commands

ADBYR - The active duty base date year (from MMS)

ADBMON - The ADBD month

ADBDAY - The ADBD day

RUC - Reporting unit code (from MMS)

ECCYR - Year of expiration of current contract date (from MMS)

ECCMON - ECCD month

ECCDAY - ECCD day

MOS - Military occupational specialty (from MMS)

NOCCUP - Number of occupational fields

NOOCUP - Number of records with blank occupational fields

NCARD - Number of MMS records read by "SETUP"

CHOICE - Index to select input data listing ("0") or listing plus matrix creation ("1")

YOS1 - Maximum number of years of service for a first-termer

YOS2 - Maximum number of years of service for an intermediate Marine

NUMCOM - Number of commands, not including "MISC2"

NMCOM2 - Number of commands, including "MISC2" if required (= "M" in "GOAL")

NUMOFS - Number of occupational fields (= "N" in "GOAL")

TEMP2 - Used to read RUCs from command definition file

YR - Goal fiscal year

MON - Starting month of goal fiscal year

DAY - Starting date of goal fiscal year

START - A number representing the start of the goal fiscal year

END1 - Defines the end of the goal fiscal year

END2 - Defines the end of the second fiscal year

LEND - End of current contract

LBEGIN - Start of active service

LENGTH - Length of service at "LEND"

NYRS - Index for length-of-service category

NFY - Index for fiscal year of "LEND"

JMCC - Index for command name

KOCCUP Index for occupational field

FAP - The number of cases in which the fleet assistance program (FAP) MCC is used

ERROR - The number of cases with enlistment contract expiration dates not in the correct 2-year period (should be zero).

Some temporary integer variables are KK, X, and CODE. The real variables are:

NOMATC - List of MCCs for MCC-RUC combinations not in the command definitions but found in MMS

COMMCC - The defining MCCs (columns) by command (rows)

TEMP1 - Used to read MCCs from command definition file

PMCC - Parent monitored command code (from MMS)

FMCC - Fleet Assistance Program MCC (from MMS)

NMCC - MCC used for assignment.

Data variables are zero (= '000') and blank (= " ").

"GOAL"

Integer variables for "GOAL" are:

FY11 - Separations data matrix for fiscal year 1 and retention category 1; FY12, FY13, FY21, FY22, and FY23 are similar

CAT - Index for years-of-service category

ASK - Index to select adjusting ("1") or not adjusting ("0") separations data for an individual command

ROW - Number of the row containing data for a specific command

NAMES - Command names

ICOMM - Name of command whose separations are to be adjusted

ICTGOL - Total goals for retention categories

TGOAL - Total goal (sum of ICTGOL)

ICGOAL - Rounded command goals

IRESLT - Summary matrix of command separations and goals

IRES - Column sums of "IRESLT"

IFIELD - Occupational fields

ICOL - Number of columns on a page of detailed output

IPAGE - Number of pages for a category of data in a detailed output

T - Maximum number of columns per page in detailed printout

IP - Index to select normal printout ("0") or a detailed printout ("1")

M - Number of commands (including one or two miscellaneous categories)

N - Number of occupational fields.

The above integer variables are used in the main routine of "GOAL." The integer variable "Z" is used as a temporary variable in the subroutine "GOALS."

The following real variables are used in the main routine:

PCT1 - Occupational field goals as percentages of unweighted sums of separations, first-term; PCT2 and PCT3 are similar

SEP1 - Weighted sum of separation matrixes for retention category 1; SEP2 and SEP3 are similar

CSEPS - Total weighted sum of separations, by command and retention category

OFSEPS - Total weighted sum of separations, by field and retention category

OFGOAL - Input goals, by occupational field and retention category

W - Weights for first fiscal year, by retention category

F1 - Multiplicative factor for adjusting separations of first fiscal year; F2 is the second-year factor.

Other variables in the indicated subroutines are:

RGOAL - Sum of command goals for a given retention category (real, in "GOALS")

RES - Nonrounded sum of separations, by retention category (real, in "ADD")

SEPPS - Unweighted sum of separations matrixes, for a retention category (real, in "PCT")

SEPPS - Weighted sum of separations matrixes, for a retention category; also the command fractions of field separations for a retention category; also the command goals, by category and field (real, all in "GOALS")

FSEPS - Unweighted sum of separations, by field and retention category (real, in "PCT")

COMGOL - Unrounded total command goal, by retention category (real, in "GOALS")

LOC - Row numbers for the N commands with the largest goals, where N is the rounding error (integer, in "GOALS")

SUM - Sum of commands' separations fractions, by field (= 1.00), (real, in "GOALS")

SUMM - Sum of unrounded command goals, by field (= Marine Corps goal), (real, in "GOALS")

RATIO - Ratio of sum of rounded command goals to Marine Corps goal (real, in "GOALS").

APPENDIX F

A CHECKLIST

APPENDIX F

A CHECKLIST

This appendix is a "cookbook" or checklist for calculating goals. The general instructions are lettered, and the detailed instructions are numbered.

A. Make an MMS extract tape.
Have a tape of Manpower Management System extracts prepared according to the prescription of appendix A.

B. Use a short run of "SETUP" to list and check the original input of occupational fields and command definitions. Correct the input files of "SETUP" if necessary.

1. Catalog files "MCC" (40), "IFIELD" (25), and "NAMES" (24). Table G-1 gives the program deck. (Use a delete card only when a file already exists.)

2. Run "SETUP" with "0" on the first card of File 80 ("CHOICE"). Table D-6 gives the format for "CHOICE;" table G-2 gives the program deck. This run will produce listings of the input occupational fields and command definitions. The fields must agree, in order, with those in the overall Marine Corps goals (File 1, "OFGOAL," table D-1). This run can be made without an extract tape. In that case, the JCL must specify tape = 0.

3. Check the definitions of commands in terms of MCCs and RUCs. Correct or update the definitions by adding or deleting cards from File 40 ("MCC"). Table D-5 gives the format. It is very desirable, but not strictly necessary, to have the MCCs and RUCs in order. If they are not, the listings within commands will probably not be in order, which would make checking some command definitions unnecessarily tedious.

4. Recatalog "MCC," "IFIELD," or "NAMES," if necessary.

C. Use a complete run of "SETUP" to check for discrepancies between MMS and the input fields, MCCs, and RUCs. If any are found make MMS and the input consistent.

Run "SETUP" with "1" on the first File 80 card. This will list the input as before and place input files for "GOAL" on disk. An extract tape and tape identification are now required.

"SETUP" will list any MCC-RUC combinations not included in the command definitions. These will be grouped in the command category "MISC2." You may wish to redefine some commands to include these combinations, or you may wish to treat some of the combinations as separate commands to obtain separate goals to allocate manually among various commands. If so, rerun "SETUP" after changing and recataloging "MCC" and "NAMES." (To add a command, put its name into "NAMES" just before "MISC2" and add its defining MCCs and RUCs at the end of "MCC," using the next available ordinal command number.)

Check the output listing to be certain that the output files (45, 47, 11, 12, 13, 21, 22, and 23) have been cataloged.

D. When satisfied with "SETUP," run "GOAL."

1. Create the file "INPUT" for "GOAL" (table D-2).

   - Usually select "NORMAL" output (0).

   - Command goals can be adjusted by multiplying separations by a factor normally less than 1. The adjustment is done separately for each command, retention category, and fiscal year affected.

   - Each adjustment is done by inserting four cards after the second card of "INPUT:" "1," an exact command name, a retention category index (1, 2, or 3), and two adjustment factors (one for each fiscal year).

2. Create the input goals file "OFGOAL" (see table D-1).

3. An MCC-RUC combination whose goals are to be shared must be treated as a separate command so that its goals are listed and can be divided manually. These goals would usually be divided in proportion to the total command separations in each retention category, which are given in the standard output. If these shared goals make a significant difference for any command, a more careful calculation may be desirable. In this case, the MCC's occupational field goals can be shared individually. For this a detailed output is needed (run "GOAL" with a "1" on the first card of File 8 ("INPUT")).

4. Run "GOAL." The program deck is in table G-3.

E. If additional adjustments are desired, rerun "GOAL" with the necessary changes to "INPUT."

APPENDIX G

PROGRAM DECKS

APPENDIX G

PROGRAM DECKS

Table G-1 illustrates a program deck for cataloging the file "MCC." The same format is used to catalog files "IFIELD" (FT24) and "NAMES" (FT25).

TABLE G-1

A DECK FOR CATALOGING FILE "MCC"

```
/*TAPE=0
//I1957DK2 JOB (601R,MMPA),'CATALOG',TIME=(1,)
//STE001 EXEC PGM=IEBGENER,REGION=120K
//SYSIN DD DUMMY
//SYSPRINT DD SYSOUT=A
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT40,DISP=(OLD,DELETE,DELETE)
//SYSUT2 DD DSN=HQMC1.MPI2.C1080.P04.FT40,DISP=(NEW,CATLG),
// DCB=(LRECL=80,BLKSIZE=400,RECFM=FBA),UNIT=SYSDA,
// SPACE=(TRK,(40,40),RLSE)
//SYSUT1 DD *

********************** INSERT DATA CARDS HERE ******************

/*
//
```

Table G-2 illustrates a deck for running "SETUP," and table G-3 shows one for running "GOAL."

Tables G-1 and G-2 contain maximum sets of delete cards. Each delete card is used only when the particular file already exists on disk. If the delete card is not used and the file does exist, the program will not update the file. The listing at the head of the output will indicate that the file was not cataloged. It is therefore important to include a delete card if a file is to be updated. "SETUP" will not run if instructed to delete a nonexistent file; therefore it is also important to omit unneeded delete cards.

TABLE G-2

A DECK FOR RUNNING "SETUP"

```
/*TAPE=1
//I1957DK2 JOB (601R,MMPA,600),'SETUP',TIME=(10,)
//STE001 EXEC FORTGCLG,PARM.LKED='XREF,LET,LIST,SIZE=(600K,120K)',
// REGION.LKED=600K,REGION.GO=600K
//FORT.SYSLIN DD SPACE=(1024,(500,100),RLSE)
********************* INSERT PROGRAM DECK HERE ******************
/*
//LKED.SYSLMOD DD DCB=(RECFM=UA,LRECL=1024,BLKSIZE=1024)
//LKED.SYSUT1 DD SPACE=(1024,(500,100),RLSE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT11,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT12,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT13,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT21,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT22,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT23,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT45,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT47,DISP=(OLD,DELETE,DELETE)
//GO.FT30F001 DD DSN=HQMC1.MPI3.C1080.P06.A14058,
// DISP=(OLD,KEEP),LABEL=(,,,IN),DCB=EROPT=ACC
//GO.FT25F001 DD DSN=HQMC1.MPI2.C1080.P04.FT25,DISP=(OLD,KEEP)
//GO.FT24F001 DD DSN=HQMC1.MPI2.C1080.P04.FT24,DISP=(OLD,KEEP)
//GO.FT40F001 DD DSN=HQMC1.MPI2.C1080.P04.FT40,DISP=(OLD,KEEP)
//GO.FT45F001 DD DSN=HQMC1.MPI2.C1080.P04.FT45,DISP=(NEW,CATLG),
// SPACE=(TRK,(1,1),RLSE),
// DCB=(LRECL=2,RECFM=FBA,BLKSIZE=40),UNIT=SYSDA
//GO.FT47F001 DD DSN=HQMC1.MPI2.C1080.P04.FT47,DISP=(NEW,CATLG),
// SPACE=(TRK,(1,1),RLSE),
// DCB=(LRECL=2,RECFM=FBA,BLKSIZE=40),UNIT=SYSDA
//GO.FT11F001 DD DSN=HQMC1.MPI2.C1080.P04.FT11,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=200,RECFM=FBA,BLKSIZE=400),UNIT=SYSDA
//GO.FT12F001 DD DSN=HQMC1.MPI2.C1080.P04.FT12,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=200,RECFM=FBA,BLKSIZE=400),UNIT=SYSDA
//GO.FT13F001 DD DSN=HQMC1.MPI2.C1080.P04.FT13,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=200,RECFM=FBA,BLKSIZE=400),UNIT=SYSDA
//GO.FT21F001 DD DSN=HQMC1.MPI2.C1080.P04.FT21,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=200,RECFM=FBA,BLKSIZE=400),UNIT=SYSDA
//GO.FT22F001 DD DSN=HQMC1.MPI2.C1080.P04.FT22,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=200,RECFM=FBA,BLKSIZE=400),UNIT=SYSDA
//GO.FT23F001 DD DSN=HQMC1.MPI2.C1080.P04.FT23,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=200,RECFM=FBA,BLKSIZE=400),UNIT=SYSDA
//GO.FT80F001 DD *

************** INSERT CARDS FOR FILE "CHOICE" HERE ************
/*
//
```

TABLE G-3

A DECK FOR RUNNING "GOAL"

```
/*TAPE=0
//I1957DK2 JOB (601R,MMPA,500),'GOALS',TIME=(1,)
//STEP01 EXEC FORTGCLG,PARM=MAR,REGION.GO=500K

****************** INSERT PROGRAM DECK HERE ******************

/*
//GO.FT08F001 DD *

************** INSERT CARDS FOR FILE "INPUT" HERE ************

/*
//GO.FT01F001 DD *

************** INSERT CARDS FOR FILE "OFGOAL" HERE ************

/*
//GO.FT45F001 DD DSN=HQMC1.MPI2.C1080.P04.FT45,DISP=(OLD,KEEP)
//GO.FT47F001 DD DSN=HQMC1.MPI2.C1080.P04.FT47,DISP=(OLD,KEEP)
//GO.FT11F001 DD DSN=HQMC1.MPI2.C1080.P04.FT11,DISP=(OLD,KEEP)
//GO.FT12F001 DD DSN=HQMC1.MPI2.C1080.P04.FT12,DISP=(OLD,KEEP)
//GO.FT13F001 DD DSN=HQMC1.MPI2.C1080.P04.FT13,DISP=(OLD,KEEP)
//GO.FT21F001 DD DSN=HQMC1.MPI2.C1080.P04.FT21,DISP=(OLD,KEEP)
//GO.FT22F001 DD DSN=HQMC1.MPI2.C1080.P04.FT22,DISP=(OLD,KEEP)
//GO.FT23F001 DD DSN=HQMC1.MPI2.C1080.P04.FT23,DISP=(OLD,KEEP)
//GO.FT25F001 DD DSN=HQMC1.MPI2.C1080.P04.FT25,DISP=(OLD,KEEP)
```

APPENDIX H

GOAL CALCULATIONS WITHOUT CONSIDERING OCCUPATIONAL FIELD

APPENDIX H

GOAL CALCULATIONS WITHOUT CONSIDERING OCCUPATIONAL FIELD

This appendix presents calculations for future goals that do not distinguish between occupational fields. The procedure is almost the same as the one given. The programs for this case are called "SET2" and "GOAL2," and are given in tables H-1 and H-2. Card file "INPUT" should have the card for selecting the amount of output removed, and the number of files is reduced. Tables H-1 and H-2 give complete decks, including job control cards. Note that the names of Files 11 and 22 are the same in the shorter calculation as in the original calculation. If both calculations are to be done, change the names of these two files in "SET2" and "GOAL2."

TABLE H-1

RUN DECK FOR "SET2"

```
/*TAPE=1
//I1957DK2 JOB (601R,MMPA,500),'SET2',TIME=(5,)
//STE001 EXEC FORTGCLG,PARM.LKED='XREF,LET,LIST,SIZE=(600K,120K)',
// REGION.LKED=600K,REGION.GO=600K
//FORT.SYSLIN DD SPACE=(1024,(500,100),RLSE)
C
C     THIS PROGRAM CALCULATES 2 MATRIXES OF SEPARATIONS BY COMMAND
C     VERSUS YEARS-OF-SERVICE CATEGORY. EACH MATRIX REPRESENTS A
C     FISCAL YEAR CONTRACT END (CURRENT OR FOLLOWING YEAR) AND 3
C     YEARS-OF-SERVICE CATEGORIES.
C          COLUMN 1= YEARS ENLISTED LE 5
C          COLUMN 2= YEARS ENLISTED GT 5 AND LE 12
C          COLUMN 3= YEARS ENLISTED GT 12.
C
      INTEGER IFY(2,3,100),NAMES(100,20),ICOUNT,NFREQ(1000),
     1NOMAT2(1000),COMRUC(100,500)
      INTEGER LEND,LBEGIN,LENGTH
      INTEGER KK,X,NOBIG,ICOLS(100)
      INTEGER ADBYR,ADBMON,ADBDAY,ECCYR,ECCMON,ECCDAY
      INTEGER CODE,NCARD,CHOICE,TEMP2
      INTEGER RUC,NUMCOM,NMCOM2
      INTEGER YR,MON,DAY,END1,END2,START
      INTEGER FAP,ERROR,YOS1,YOS2
      REAL COMMCC(100,400),TEMP1,NOMATC(1000)
      REAL PMCC,FMCC,NMCC
      DATA BLANK/'   '/
      DATA ZERO/'000'/
      ERROR=0
      FAP=0
      NOBIG=0
```

TABLE H-1 (Cont'd)

```
      CONSUM=0
C
C      ZERO THE SEPARATIONS MATRIX
C
      DO 7 I=1,2
      DO 7 J=1,3
      DO 7 K=1,100
      IFY(I,J,K)=0
    7 CONTINUE
C
C     READ IN MCC-RUC COMBINATIONS THAT DEFINE THE COMMANDS.
C     DETERMINE THE NUMBER OF COMBINATIONS FOR EACH COMMAND.
C
      DO 6 I=1,100
      ICOLS(I)=1
    6 CONTINUE
    8 CONTINUE
      READ(40,45,END=12) ICOUNT,TEMP1,TEMP2
      NUMCOM=ICOUNT
      X=ICOLS(ICOUNT)
      COMMCC(ICOUNT,X)=TEMP1
      COMRUC(ICOUNT,X)=TEMP2
      ICOLS(ICOUNT)=1+ICOLS(ICOUNT)
      GO TO 8
   12 CONTINUE
C
C      READ THE RUN MODE, THE GOAL YEAR START DATE, AND THE
C      CUTOFF YEARS FOR THE RETENTION CATEGORIES
C
      READ(80,10) CHOICE
      READ (80,666) YR,MON,DAY
      READ (80,70) YOS1,YOS2
      YOS1=YOS1*360
      YOS2=YOS2*360
      START=YR*360+MON*30+DAY
      END1=START+359
      END2=START+719
    5 CONTINUE
   19 CONTINUE
      NMCOM2=NUMCOM
C
C      READ COMMAND NAMES AND PRINT COMMAND DEFINITIONS
C
      NMCOM2=NUMCOM+1
      DO 18 J=1,NMCOM2
      READ (24,770) (NAMES(J,I),I=1,20)
   18 CONTINUE
      DO 13 J=1,NUMCOM
      ICOLS(J)=ICOLS(J)-1
      KK=ICOLS(J)
      IF (ICOLS(J).EQ.1) GO TO 14
      WRITE(6,688) J,(NAMES(J,I),I=1,20),ICOLS(J),((COMMCC(J,I),
     1COMRUC(J,I)),I=1,KK)
      GO TO 16
   14 WRITE(6,689) J,(NAMES(J,I),I=1,20),ICOLS(J),((COMMCC(J,I),
     1COMRUC(J,I)),I=1,KK)
   16 WRITE(6,11)
   13 CONTINUE
      WRITE(6,11)
C
C     ZERO VECTORS OF UNMATCHED MCC-RUC COMBINATIONS
C
      DO 77 I=1,1000
      NOMATC(I)=0.
      NOMAT2(I)=0
   77 CONTINUE
```

TABLE H-1 (Cont'd)

```
C
C     CHOOSE WHETHER TO STOP OR TO CALCULATE THE SEPARATIONS MATRIXES
C
      IF (CHOICE.EQ.0) GO TO 777
C
C     READ RECORDS AND PUT SEPARATIONS INTO MATRIXES
C
      NCARD=0
      DO 100 N=1,200000
      READ(30,60,END=999) PMCC,RUC,FMCC,ADBYR,ADBMON,ADBDAY,ECCYR,ECCMON
     1,ECCDAY
C
C     SELECT PARENT OR FAP MCC
C
      NMCC=PMCC
      IF ((FMCC.NE.ZERO).AND.(FMCC.NE.BLANK)) NMCC=FMCC
      IF ((FMCC.NE.ZERO).AND.(FMCC.NE.BLANK)) FAP=FAP+1
      NCARD=NCARD + 1
C
C      CALCULATE LENGTH-OF-SERVICE (RETENTION) CATEGORY
C
      LEND=(ECCYR*360 + ECCMON*30 + ECCDAY)
      LBEGIN=(ADBYR*360 + ADBMON*30 + ADBDAY)
      LENGTH=LEND-LBEGIN
      IF (LENGTH.LE.YOS1) NYRS=1
      IF (LENGTH.GT.YOS1.AND.LENGTH.LE.YOS2) NYRS=2
      IF (LENGTH.GT.YOS2) NYRS=3
C
C     CALCULATE FISCAL YEAR CATEGORY--NFY
C
      IF ((LEND.LT.START).OR.(LEND.GT.END2)) GO TO 888
      IF(LEND.GE.START.AND.LEND.LE.END1) NFY=1
      IF(LEND.GT.END1.AND.LEND.LE.END2) NFY=2
      GO TO 556
  888 ERROR=ERROR+1
      GO TO 100
C
C      IDENTIFY THE COMMAND
C
  556 DO 200 J=1,NUMCOM
      KK=ICOLS(J)
      DO 200 K=1,KK
      CODE=0
      IF((RUC.EQ.COMRUC(J,K)).OR.COMRUC(J,K).EQ.0)CODE=1
      IF((NMCC.EQ.COMMCC(J,K)).AND.CODE.EQ.1) JMCC=J
      IF((NMCC.EQ.COMMCC(J,K)).AND.CODE.EQ.1) GO TO 201
      IF (J .EQ. NUMCOM .AND. K .EQ. ICOLS(J)) GO TO 500
  200 CONTINUE
C
C     COLLECT DATA ON UNMATCHED MCC-RUC COMBINATIONS.
C
  500 CONTINUE
      DO 550 NO=1,1000
      JMCC=NUMCOM+1
      NMCOM2=JMCC
      IF((NMCC.EQ.NOMATC(NO)).AND.(RUC.EQ.NOMAT2(NO)))
     1NFREQ(NO)=NFREQ(NO)+1
      IF((NMCC.EQ.NOMATC(NO)).AND.(RUC.EQ.NOMAT2(NO))) GO TO 201
      IF (NOMATC(NO) .NE. 0.) GO TO 550
      IF (NOMATC(NO).EQ.0.) NFREQ(NO)=1
      IF (NOMATC(NO) .EQ. 0.) NOMATC(NO)=NMCC
      IF (NOMAT2(NO).EQ.0) NOMAT2(NO)=RUC
      IF (NO .GT. NOBIG) NOBIG=NO
      GO TO 201
  550 CONTINUE
C
```

TABLE H-1 (Cont'd)

```
C       INCREMENT THE SEPARATIONS MATRIX
C
  201 IFY(NFY,NYRS,JMCC)=IFY(NFY,NYRS,JMCC) + 1
  100 CONTINUE
  999 CONTINUE
C
C     WRITE EACH MATRIX TO DISK
C
C     IFY (F,N,J): F=FISCAL YEAR OF SEPARATIONS; N=YEARS-OF-SERVICE
C                  CATEGORY; J=COMMAND
C
      DO 300 J=1,NMCOM2
      WRITE (11,1000) (IFY(1,I,J),I=1,3)
      WRITE (22,1000) (IFY(2,I,J),I=1,3)
  300 CONTINUE
      WRITE(6,11)
      WRITE(6,555) FAP
      WRITE(6,11)
      WRITE(6,701) ERROR
      WRITE(45,50) NMCOM2
      WRITE(6,11)
C
C      LIST MCC-RUC COMBINATIONS FOUND IN MMS,BUT
C      NOT IN THE COMMAND DEFINITIONS
C
      IF (NOBIG.EQ.0) GO TO 801
      WRITE (6,700)
      DO 800 I=1,NOBIG
      WRITE(6,750) NOMATC(I),NOMAT2(I),NFREQ(I)
  800 CONTINUE
      WRITE(6,11)
      WRITE(6,802)
  801 CONTINUE
      WRITE(6,11)
      WRITE (6,900) NCARD
   10 FORMAT(I1)
   11 FORMAT(1X)
   45 FORMAT (I3,1X,A3,1X,I5)
   50 FORMAT(I2)
   60 FORMAT (A3,I5,A3,3I2,3I2)
   70 FORMAT (2I3)
  555 FORMAT(1X,I8,' RECORDS USED THE FAP MCC.')
  666 FORMAT(3I2)
  688 FORMAT(1X,'COMMAND ',I3,2X,20A1,' HAS ',I3,' MCC-RUC COMBINATIONS:
     1',4X,3(A3,'-',I5,1X),100(/,58X,4(A3,'-',I5,1X)))
  689 FORMAT(1X,'COMMAND ',I3,2X,20A1,' HAS ',I3,' MCC-RUC COMBINATION:
     1',4X,3(A3,'-',I5,1X),100(/,58X,4(A3,'-',I5,1X)))
  692 FORMAT(1X,50I3)
  700 FORMAT(6X,'MCC-RUC COMBINATIONS THAT ARE NOT IN COMMAND DEFINITION
     1 LIST:',/,/,/,10X,'MCC',3X,'RUC',7X,'FREQ',/)
  701 FORMAT(1X,I5,' BAD RECORDS WERE FOUND.')
  750 FORMAT(10X,A3,2X,I5,4X,I5)
  770 FORMAT (20A1)
  802 FORMAT(1X,'COMBINATION(S) ABOVE IS(ARE) INCLUDED IN COMMAND ''MISC
     12''')
  900 FORMAT (1X,I8,' RECORDS WERE READ')
 1000 FORMAT (3I4)
  777 CONTINUE
      END
/*
//LKED.SYSLMOD DD DCB=(RECFM=UA,LRECL=1024,BLKSIZE=1024)
//LKED.SYSUT1 DD SPACE=(1024,(500,100),RLSE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT11,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT22,DISP=(OLD,DELETE,DELETE)
//DELETE DD DSN=HQMC1.MPI2.C1080.P04.FT45,DISP=(OLD,DELETE,DELETE)
//GO.FT30F001 DD DSN=HQMC1.MPI3.C1080.P06.A14038,
```

TABLE H-1 (Cont'd)

```
// DISP=(OLD,KEEP),LABEL=(,,,IN),DCB=EROPT=ACC
//GO.FT25F001 DD DSN=HQMC1.MPI2.C1080.P04.FT25,DISP=(OLD,KEEP)
//GO.FT24F001 DD DSN=HQMC1.MPI2.C1080.P04.FT24,DISP=(OLD,KEEP)
//GO.FT40F001 DD DSN=HQMC1.MPI2.C1080.P04.FT40,DISP=(OLD,KEEP)
//GO.FT45F001 DD DSN=HQMC1.MPI2.C1080.P04.FT45,DISP=(NEW,CATLG),
// SPACE=(TRK,(1,1),RLSE),
// DCB=(LRECL=2,RECFM=FBA,BLKSIZE=40),UNIT=SYSDA
//GO.FT11F001 DD DSN=HQMC1.MPI2.C1080.P04.FT11,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=120,RECFM=FBA,BLKSIZE=120),UNIT=SYSDA
//GO.FT22F001 DD DSN=HQMC1.MPI2.C1080.P04.FT22,DISP=(NEW,CATLG),
// SPACE=(TRK,(40,40),RLSE),
// DCB=(LRECL=120,RECFM=FBA,BLKSIZE=120),UNIT=SYSDA
//GO.FT80F001 DD *

********** INSERT CARDS FOR FILE 'CHOICE' HERE ********************

/*
//
$
```

TABLE H-2

RUN DECK FOR "GOAL2"

```
/*TAPE=0
//I1957DK2 JOB (601R,MMPA,500),'GOAL2',TIME=(,10)
//STEP01 EXEC FORTGCLG,PARM=MAR,REGION.GO=500K
C                       'GOAL2' CALCULATES RETENTION GOALS, GIVEN
C                       SEPARATION DATA FOR EACH OF 2 FISCAL YEARS.
C
      REAL F1,F2
      INTEGER FY11(100,3),FY22(100,3),CAT,ASK,ROW,TGOAL,N,IFIELD(50)
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100),SEP2(100),SEP3(100),N,OFGOAL(50,3),ICOMM(20),
     2W(3),M
C
C     READ THE NUMBER OF COMMANDS, INCLUDING MISC2 IF REQUIRED
C
      READ(45,87) M
C
C     READ OCCUPATIONAL FIELDS AND OCCUPATIONAL FIELD GOALS
C
      DO 27 J=1,50
      N=J-1
      READ (25,86,END=666) IFIELD(J)
      READ (1,80,END=666) (OFGOAL(J,I),I=1,3)
   27 CONTINUE
  666 CONTINUE
C
C     READ SEPARATIONS MATRIXES AND COMMAND NAMES
C
      DO 17 I=1,M
      READ (11,82,END=444) (FY11(I,J),J=1,3)
      READ (22,82,END=444) (FY22(I,J),J=1,3)
      READ (24,84)(NAMES(I,J),J=1,20)
   17 CONTINUE
C
C     READ WEIGHTS FOR THE FIRST FISCAL YEAR
C
    2 CONTINUE
      READ (8,97) W
      WRITE (6,55)
      WRITE(6,57) W(1),W(2),W(3)
      WRITE (6,108)
      IF((W(1.0).LE.1.0).AND.(W(2).LE.1.0).AND.(W(3).LE.1.0))GO TO 4
      WRITE (6,56)
      GO TO 2
    4 CONTINUE
      GO TO 26
  444 WRITE(6,777)
      GO TO 93
C
C         CHANGE SOME SEPARATIONS DATA,IF DESIRED
C
   26 CONTINUE
      READ (8,64) ASK
```

TABLE H-2 (Cont'd)

```
      IF (ASK.EQ.1) GO TO 89
      GO TO 50
   89 WRITE (6,66)
      READ (8,84) ICOMM
      CALL ROWS (ICOMM,ROW)
      IF (ROW.LE.M) GO TO 30
      WRITE (6,68) ICOMM
      GO TO 93
   30 CONTINUE
      WRITE (6,70)
      READ (8,64) CAT
      IF ((CAT.EQ.1).OR.(CAT.EQ.2).OR.(CAT.EQ.3)) GO TO 32
      WRITE (6,91) CAT
      GO TO 93
   32 WRITE (6,74)
      READ (8,95) F1,F2
      WRITE(6,555)((NAMES(ROW,J),J=1,20),CAT,F1,F2)
      IF (CAT.NE.1) GO TO 38
      CALL ADJUST (FY11,ROW,F1,1)
      CALL ADJUST (FY22,ROW,F2,1)
      GO TO 42
   38 IF (CAT.NE.2) GO TO 40
      CALL ADJUST (FY11,ROW,F1,2)
      CALL ADJUST (FY22,ROW,F2,2)
      GO TO 42
   40 IF (CAT.NE.3) GO TO 32
      CALL ADJUST (FY11,ROW,F1,3)
      CALL ADJUST (FY22,ROW,F2,3)
   42 CONTINUE
      WRITE(6,660)
      READ(8,64) ASK
   50 IF (ASK.EQ.1) GO TO 26
C
C          SUM RETENTION CATEGORY GOALS
C
      DO 52 K=1,3
      ICTGOL(K)=0
      DO 52 I=1,N
      ICTGOL(K)=ICTGOL(K)+OFGOAL(I,K)
   52 CONTINUE
C
C          MAKE WEIGHTED SUMS OF SEPARATIONS AND CALCULATE GOALS
C
      CALL ADD (FY11,FY22,SEP1,1)
      CALL GOALS (SEP1,1,4)
      CALL ADD (FY11,FY22,SEP2,2)
      CALL GOALS (SEP2,2,5)
      CALL ADD (FY11,FY22,SEP3,3)
      CALL GOALS (SEP3,3,6)
C
C          PRINT SUMMARY SEPARATIONS DATA
C
      WRITE (6,108)
      WRITE (6,104)
      WRITE (6,92)
      WRITE (6,94)
      WRITE (6,96)
      WRITE (6,98) (((NAMES(I,J),J=1,20),(IRESLT(I,J),J=1,3)),I=1,M)
      WRITE (6,100)
      WRITE (6,102) (IRES(I),I=1,3)
C
C          PRINT SUMMARY GOALS DATA
C
      WRITE (6,108)
      WRITE (6,88)
      WRITE (6,92)
```

TABLE H-2 (Cont'd)

```
      WRITE (6,94)
      WRITE (6,96)
      WRITE (6,98) (((NAMES(I,J),J=1,20),(IRESLT(I,J),J=4,6),I=1,M))
      WRITE (6,100)
      WRITE (6,102) (IRES(I),I=4,6)
      TGOAL=0
      DO 22 I=1,3
      TGOAL=TGOAL+ICTGOL(I)
   22 CONTINUE
      WRITE (6,108)
      WRITE (6,222) TGOAL
      WRITE (6,108)
C
C        PRINT OVERALL OCCUPATIONAL FIELD GOALS (INPUT)
C
      WRITE (6,108)
      WRITE (6,111)
      WRITE (6,113)
      WRITE (6,114)
      WRITE (6,116)
      WRITE (6,118)
      WRITE (6,121) (IFIELD(I),(OFGOAL(I,J),J=1,3),I=1,N)
      WRITE (6,122)
      WRITE (6,123) (ICTGOL(K),K=1,3)
   35 CONTINUE
   93 STOP
C
   55 FORMAT (1X,'WEIGHT FACTORS FOR THE FIRST FISCAL YEAR ARE:')
   56 FORMAT (1X,'WARNING:WEIGHTS FOR THE 2 YEARS SHOULD ADD TO 1.')
   57 FORMAT(31X,F5.2,' (FIRST-TERM)',/,31X,F5.2,' (INTERMEDIATE)',/,31X
     1,F5.2,' (CAREER)')
   64 FORMAT (I1)
   66 FORMAT (1X,'NAME THE COMMAND FOR ADJUSTMENT')
   68 FORMAT(1X,'WARNING:INSERT THE EXACT COMMAND NAME. YOU USED ',20A1)
   70 FORMAT (1X,'NAME A RETENTION CATEGORY FOR ADJUSTMENT(1ST TERM=1,IN
     1TER.=2,CAREER=3)')
   74 FORMAT (1X,'INSERT A MULTIPLICATIVE FACTOR FOR EACH FISCAL YEAR.')
   80 FORMAT (3F5.0)
   82 FORMAT (3I4)
   84 FORMAT (20A1)
   86 FORMAT (I2)
   87 FORMAT (I2)
   88 FORMAT (35X,'GOALS',/,35X,'-----')
   91 FORMAT (1X,'WARNING:CATEGORY MUST BE 1, 2, OR 3. YOU USED ',I1)
   92 FORMAT (26X,'FIRST    INTER-')
   94 FORMAT (1X,'COMMANDS                  TERM    MEDIATE   CAREER')
   95 FORMAT (2F6.3)
   96 FORMAT (1X,'--------                  ----    -------   ------')
   97 FORMAT (3F6.3)
   98 FORMAT (1X,20A1,I9,I10,I9)
  100 FORMAT (1X,'-------------------------------------------------')
  102 FORMAT (3X,'TOTALS            ',I9,I10,I9)
  104 FORMAT(30X,'WEIGHTED SUM OF',/,32X,'SEPARATIONS',/,32X,'----------
     *-')
  108 FORMAT (1X)
  111 FORMAT (19X,'OVERALL GOALS')
  113 FORMAT (1X,'OCCUPA-           -------------')
  114 FORMAT (1X,'TIONAL      FIRST     INTER-   ')
  116 FORMAT (1X,'FIELDS      TERM     MEDIATE   CAREER')
  118 FORMAT (1X,'------      -----    -------   ------')
  121 FORMAT (1X,I4,3X,3F10.0)
  122 FORMAT (1X,'-------------------------------------')
  123 FORMAT (1X,'TOTALS',3I10)
  222 FORMAT (1X,' TOTAL GOAL IS ',I6)
  555 FORMAT (1X,20A1,' CATEGORY ',I1,'   FACTORS: ',F6.3,F6.3)
  660 FORMAT (1X,'DO YOU WISH TO ADJUST ANY MORE SEPARATIONS?')
```

TABLE H-2 (Cont'd)

```
  777 FORMAT (1X,'WARNING: YOU RAN OUT OF DATA TOO SOON')
      END
C
C           'ADD' PRODUCES A WEIGHTED SUM OF TWO YEARS' SEPARATION DATA
C
      SUBROUTINE ADD (YR1,YR2,SEPPS,K)
C
      INTEGER YR1(100,3),YR2(100,3)
      REAL SEPPS(100)
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100),SEP2(100),SEP3(100),N,OFGOAL(50,3),ICOMM(20),
     2W(3),M
      REAL RES(3)
      RES(K)=0.
      DO 2 I=1,M
      SEPPS(I)=(W(K)*YR1(I,K))+((1-W(K))*YR2(I,K))
      RES(K)=RES(K)+SEPPS(I)
    2 CONTINUE
      IRES(K)=RES(K)+0.5
      END
C
C
C           'GOALS' CALCULATES THE COMMAND GOALS,GIVEN THE
C           WEIGHTED SUMS OF SEPARATIONS
C
      SUBROUTINE GOALS (SEPPS,K,L)
C
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100),SEP2(100),SEP3(100),N,OFGOAL(50,3),ICOMM(20),
     2W(3),M
      REAL COMGOL(100),TOTSEP,SEPPS(100),SUM,SUMM,RATIO,RGOAL
      INTEGER Z,INT,LOC(100)
      SUM=0.
      SUMM=0.
      TOTSEP=0.
      Z=0
C
C     SUM SEPARATIONS FOR RETENTION CATEGORY K
C
      DO 14 I=1,M
      TOTSEP=TOTSEP+SEPPS(I)
      IRESLT(I,K)=SEPPS(I)+0.5
   14 CONTINUE
C
C                     CONVERT SEPARATIONS TO FRACTIONS OF RETENTION
C                     CATEGORY SEPARATIONS
C
      DO 16 I=1,M
      IF (TOTSEP.EQ.0.) GO TO 16
      SEPPS(I)=SEPPS(I)/TOTSEP
   16 CONTINUE
C
C           SUM FRACTIONS OVER COMMANDS
C
      DO 19 I=1,M
      SUM=SUM+SEPPS(I)
   19 CONTINUE
C
C                     CALCULATE COMMAND GOALS
C
      DO 24 I=1,M
      COMGOL(I)=SEPPS(I)*ICTGOL(K)
   24 CONTINUE
   36 RGOAL=0
      DO 34 I=1,M
      ICGOAL(I)=COMGOL(I)+0.5
```

TABLE H-2 (Cont'd)

```
      RGOAL=RGOAL+ICGOAL(I)
   34 CONTINUE
C
C           COMPARE CATEGORY GOAL TO SUM OF COMMAND GOALS AND ADJUST
C
      IF (RGOAL.EQ.0) GO TO 42
      RATIO=ICTGOL(K)/RGOAL
      IF (RATIO.EQ.1.0) GO TO 42
      IF (Z.EQ.1) GO TO 42
      DO 40 I=1,M
      COMGOL(I)=COMGOL(I)*RATIO
   40 CONTINUE
      Z=1
      GO TO 36
   42 CONTINUE
      INT=ICTGOL(K)-RGOAL
      IF (INT.EQ.0) GO TO 48
      SIGN=1
      IF (INT.LT.0) SIGN=-1
      IF (INT.LT.0) INT=-INT
C
C           FIND LARGEST COMMAND GOALS FOR ADJUSTING TO MAKE
C           SUM OF COMMAND GOALS EQUAL CATEGORY GOAL
C
      CALL LARG (INT,M,LOC,ICGOAL)
      DO 46 J=1,INT
      DO 44 MM=1,M
      Z=LOC(J)
      IF (MM.EQ.Z) ICGOAL(MM)=ICGOAL(MM)+SIGN
      IF (MM.EQ.Z) GO TO 46
   44 CONTINUE
   46 CONTINUE
   48 CONTINUE
C
C           PUT COMMAND GOALS IN OUTPUT MATRIX
C
      DO 50 I=1,M
      IRESLT(I,L)=ICGOAL(I)
   50 CONTINUE
C
C           PUT SUM OF COMMAND GOALS IN OUTPUT VECTOR
C
      IRES(L)=0
      DO 52 I=1,M
      IRES(L)=IRES(L)+IRESLT(I,L)
   52 CONTINUE
      RETURN
C
C
C
      END
C
C           'LARG' FINDS THE LOCATIONS OF THE INT LARGEST
C           COMMAND GOALS, WHERE INT IS THE ROUNDOFF DISCREPANCY
C
      SUBROUTINE LARG (INT,M,IH1,ARRAY)
C
      INTEGER ARRAY(100), IH1(100), IH2(100)
      DO 2 I=1,INT
C
C           FIRST 'DO' LOOPS FIND AN INITIAL CANDIDATE FOR A VECTOR
C           OF LOCATIONS OF THE INT LARGEST COMMAND GOALS
C
    2 IH1(I)=I
    4 DO 12 J=1,M
      DO 10 I=1,INT
```

TABLE H-2 (Cont'd)

```
      Z=IH1(I)
      IF (ARRAY(Z).GT.ARRAY(J)) GO TO 10
      IF ((ARRAY(Z).EQ.ARRAY(J)).AND.(Z.NE.J)) GO TO 10
      IF (J.EQ.M) GO TO 8
      DO 6 K=1,INT
      IF ((IH1(K).EQ.J).AND.(K.NE.I)) GO TO 12
    6 CONTINUE
    8 IH1(I)=J
      GO TO 12
   10 CONTINUE
   12 CONTINUE
C
C           MAKE A COPY OF THE INITIAL CANDIDATE
C
      DO 14 I=1,INT
      IH2(I)=IH1(I)
   14 CONTINUE
      DO 22 J=1,M
      DO 20 I=1,INT
      Z=IH2(I)
C
C           CHECK FOR INDEXES THAT GIVE LARGER GOALS, BUT THAT
C           ARE NOT IN THE LATEST CANDIDATE
C
      IF (ARRAY(Z).GT.ARRAY(J)) GO TO 20
      IF ((ARRAY(Z).EQ.ARRAY(J)).AND.(Z.NE.J)) GO TO 20
      IF (J.EQ.M) GO TO 18
      DO 16 K=1,INT
      IF ((IH2(K).EQ.J).AND.(K.NE.I)) GO TO 22
   16 CONTINUE
   18 IH2(I)=J
      GO TO 22
   20 CONTINUE
   22 CONTINUE
C
C           CHECK WHETHER LATEST CANDIDATE IS EQUAL TO THE
C           PREVIOUS CANDIDATE
C
      DO 24 I=1,INT
      IF (IH1(I).NE.IH2(I)) GO TO 26
   24 CONTINUE
      GO TO 30
C
C           START WITH THE NEW CANDIDATE
C
   26 DO 89 I=1,INT
      IH1(I)=IH2(I)
   89 CONTINUE
C
C           REPEAT UNTIL NO CHANGE OCCURS
C
      GO TO 4
   30 CONTINUE
      RETURN
      END
C
C           'ROWS' IDENTIFIES THE ROW IN WHICH DATA FOR A GIVEN
C           COMMAND ARE LOCATED
C
      SUBROUTINE ROWS (X,ROW)
C
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100),SEP2(100),SEP3(100),N,OFGOAL(50,3),ICOMM(20),
     2W(3),M
      INTEGER X(20),ROW
      ROW=M+1
```

TABLE H-2 (Cont'd)

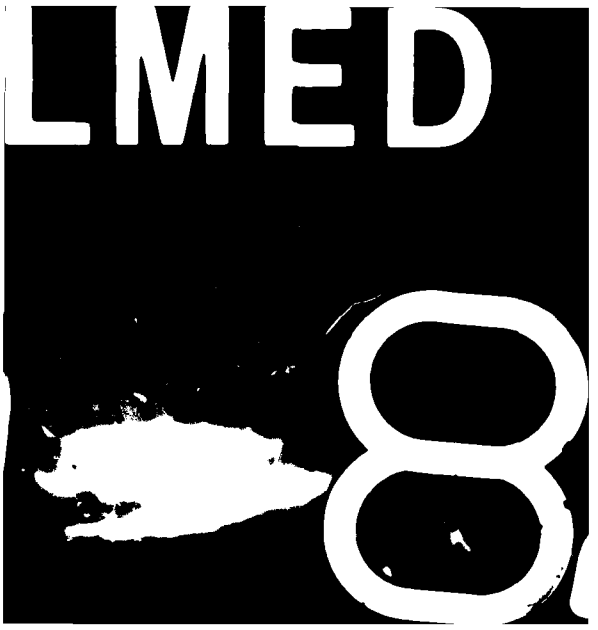
```
      DO 4 I=1,M
      DO 2 J=1,20
      IF (X(J).NE.NAMES(I,J)) GO TO 4
      IF (J.EQ.20) ROW=I
    2 CONTINUE
    4 CONTINUE
      RETURN
      END
C
C           'ADJUST' MULTIPLIES A ROW IN A SEPARATIONS DATA
C           MATRIX BY A GIVEN FACTOR
C
      SUBROUTINE ADJUST (FYIN,X,FACTOR,K)
C
      COMMON NAMES(100,20),ICGOAL(100),ICTGOL(3),IRESLT(100,6),
     1IRES(6),SEP1(100),SEP2(100),SEP3(100),N,OFGOAL(50,3),ICOMM(20),
     2W(3),M
      INTEGER X
      INTEGER FYIN(100,3)
      REAL FACTOR,K
      FYIN(X,K)=FYIN(X,K)*FACTOR
      RETURN
      END
/*
//GO.FT08F001 DD *

*************** INSERT CARDS FOR FILE 'INPUT' HERE ***********************

/*
//GO.FT01F001 DD *

******************* INSERT CARDS FOR FILE 'OFGOAL' HERE ******************

/*
//GO.FT45F001 DD DSN=HQMC1.MPI2.C1080.P04.FT45,DISP=(OLD,KEEP)
//GO.FT11F001 DD DSN=HQMC1.MPI2.C1080.P04.FT11,DISP=(OLD,KEEP)
//GO.FT22F001 DD DSN=HQMC1.MPI2.C1080.P04.FT22,DISP=(OLD,KEEP)
//GO.FT24F001 DD DSN=HQMC1.MPI2.C1080.P04.FT24,DISP=(OLD,KEEP)
//GO.FT25F001 DD DSN=HQMC1.MPI2.C1080.P04.FT25,DISP=(OLD,KEEP)
/*
//
*
```


LMED
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